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THE ANALYSIS OF STRUCTURAL CHANGE: ECONOMIC GROWTH AND EMPLOYMENT

In the present essay an attempt will be made to approach the problems associated with employment in a manner that differs from the one usual in economics. Many publications about the labour market may be sociological or socio-psychological in nature, but among economists it has up till now been common practice to look upon problems of employment and unemployment as purely economic issues. Discrepancies are measured in terms of unemployment and vacancies; when there is little unemployment and demand is satisfied to a high degree, the situation is described as one of a balanced labour market.

Economists reasoning thus, apply in fact a criterion for the presence or absence of a satisfactory situation that is essentially very simple, ascertaining, on the supply side, whether or not a person is employed, and on the demand side, whether or not a position is occupied. Employment and/or filled positions mean equilibrium, unemployment and/or vacancies spell discrepancy.

The outcome of such an approach is evident. As long as there is no unemployment there is no problem either, the less so because vacancies tend to be taken less seriously than unrequited labour supply. The state of the economy is pronounced healthy, hardly any notice being taken of the conditions under which people are working. Trade unions may pretend to work towards bettering working people's situations, but do not extend their activities to all direct and indirect work conditions.

There is ample reason for an essay dealing with economic growth and employment to concentrate on matters that have remained sadly neglected so far, and to study the problems and especially

* Thanks are due to Mrs. A. C. A. Elderson who translated the original Dutch text.

the quality of employment in a wider setting. Thus, aspects that until now have remained dark will surely come to light, aspects that will enable us to gain more insight into the mechanisms of the labour market than could be obtained by the conventional, strongly quantity-oriented, approach.

Discrepancies on the Supply Side

Spatial Discrepancies

It seems sensible to make the approach heralded in the previous section a gradual one. As a first, illustrative step, the spatial aspects of the labour market will be dealt with.

As a starting point, we choose the assumption that an individual will experience it as a disadvantage when he has to travel daily a certain distance to get from his home to the place where he works. This assumption implies that an increase in commuting distance will reduce his well-being, while its reduction will increase it. In other words: an increase in commuting distance enhances the discrepancy between the desired and the actual situation. Therefore, the home-to-work distance, as an element of the tension between desirability and actuality, is one of the indicators of the satisfaction an individual derives from participating in the work process. The longer the commuting distance, the greater the tension from discrepancy.

Equilibrium as traditional economics understands it, can exist both with long-distance commuting and with commuting within reasonable limits; still, tension can be so much worse in the former situation than in the latter, that a comparison hardly makes sense. Applied to the whole active population, that statement means that even with full employment, there can be considerable tension on the labour market; such tension does not find expression in the number of unemployed.

Two remarks must be made here.

The first is that, as practical experiments have indicated, the assumption that the tension between desirability and actuality increases with commuting distance seems valid for commuting distances exceeding a certain value. Investigations carried out at the Netherlands Economic Institute have proved, for example, that in the north wing of the Randstad Holland commuters are indifferent to travel times of less than 30 minutes; above that threshold, the numbers of commuters indeed decreases with increasing distances.

If the facts have been presented truthfully, the theory developed above applies to travel times of more than 30 minutes.

The second remark is a much more fundamental one: it refers to the question what factors actually determine the acceptance of a certain commuting time. Let us assume for a moment that place of living and place of work are chosen simultaneously, realising, of course, that people are considerably less free in choosing their workplace than their residence. In that case the decision rests on elements related to (i) the quality of the work, work conditions and reward, and (ii) the quality of living. Now it is quite possible that a certain combination of working and living, with workplace and home at a sizeable distance from each other, yields greater well-being than another combination involving less daily travel, simply because the satisfaction derived from working and/or living is so much less in the latter case than in the former that, though the sacrifice required for daily travel is smaller, the net well-being remains inferior. Indeed, people are fleeing from city centres to suburbs, accepting longer commuting distances in exchange for happier living conditions. Evidently, the sacrifice required for bridging the greater commuting distance is amply made good by the advantages offered by living on the outskirts of a town or even in suburban municipalities.

There are, then, spatial relations between labour-market problems and other kinds of problems. And not only spatial relations, as we shall see. Already now we know enough to be warned not to divorce the labour market from other aspects of human life, treating its problems as though they concerned the labour market alone.

Thus enlightened, we can now define more accurately the effects of intervention in the spatial tensions on the labour market by applying a modified Pareto-definition to intra-personal welfare differences. A decrease in excessive commuting distances contributes to well-being if, and to the extent that, the gain accomplished in one area of well-being is not attended by greater loss of well-being in other areas (if what is gained on the swings is not lost on the roundabout).

The "net-contribution criterion" for successful intervention will be satisfied if the government succeeds in influencing the spatial distribution of activities and population in such a way that commuting distances dwindle while the pleasure of living and the quality of jobs are maintained on the same level.

Home-to-work traffic determines to a major degree the volume

of traffic flows, in particular in and around urban agglomerations. If that volume in turn may be considered decisive for the infrastructure required, less passenger-kilometers produced in home-to-work transport, public as well as private, also mean less investment and maintenance costs. Hence, the spatial aspects of labour-market problems are connected not only with physical planning but also with transport and infrastructure planning.

Of course, problems associated with commuting cannot always and everywhere be solved by the same kinds of measures, for they are caused by different sets of circumstances.

Sometimes a region has a shortage of adequate positions, and the resident population has no choice but to go looking for work elsewhere, perhaps at considerable distance from home. To improve the situation, the government may either give financial and other support to industries qualifying for establishment in the region, or stimulate emigration from that region to others where jobs are available. The latter policy has been applied, with a modicum of success, in Great Britain, France, and the Netherlands, and with more striking results in Sweden, where policy measures are somewhat different.

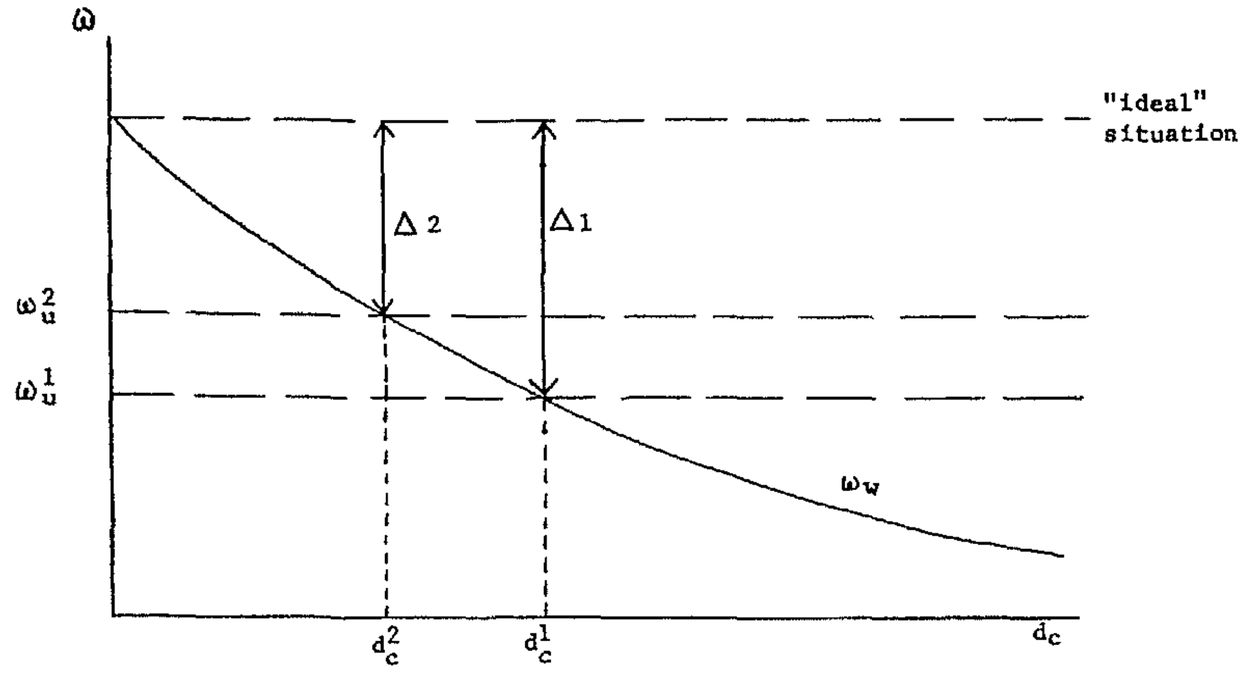
The former policy, promoting employment in backward regions, has become a regular feature of regional policy in most Western and a large number of non-Western countries.

In other cases, however, people have come to accept long commuting distances because certain regions are so very attractive as residential areas. In such cases the problem is more complicated to deal with. Measures to stimulate living in city centres, making them more attractive, might be effective; despite considerable obstacles to be overcome, such measures are becoming an accepted and increasingly important feature of urban policy.

Elaborating upon the theme of spatial discrepancies on the labour market, we propose now to analyse an individual's well-being under varying conditions.

Suppose an individual derives a certain amount of satisfaction from living in a certain environment and working elsewhere, dependent on the distance he has to cover in his home-to-work journeys. The longer the distance, the smaller the satisfaction. Suppose further that the location of his home is fixed, and that he has various alternative (qualitatively equivalent) jobs at various distances from his home to choose from. The well-being he derives from working at a certain distance from his (fixed) residence (ω_w) is represented by the curve in diagram 1, in which distances

FIGURE 1



are measured along the horizontal axis, levels of well-being along the vertical one.

The horizontal dotted lines $\omega_u{}^1$ and $\omega_u{}^2$ represent levels of well-being derived from not working but receiving unemployment benefit. At a distance $d_c{}^1$ (critical distance), ω_w is equal to $\omega_u{}^1$, which means that for the individual concerned, the satisfaction derived from working at a distance $d_c{}^1$ from his home is equal to that derived from not working. At that critical point, wages plus work satisfaction less the sacrifice in money, time, and effort the worker has to make in daily commuting, amount to the same well-being as that provided by unemployment benefit. When unemployment benefit is raised to $\omega_u{}^2$, the critical point, where the straight dotted line $\omega_u{}^2$ crosses the curve ω_w, moves upwards and to the left, the critical distance becoming $d_c{}^2$. Our man will prefer being unemployed to travelling farther than a distance $d_c{}^2$ from home to work.

Of course it must be realized that a man does not qualify for unemployment benefit simply by deciding not to work. That will happen only when the agency paying the benefits also considers $d_c{}^2$, or $d_c{}^1$, as the case may be, the critical distance beyond which one can no longer talk of "appropriate work". It may be assumed that on the whole government and active population see eye to eye in this matter.

Under the assumption that there is work to be found beyond critical distances, two conclusions can be drawn formally from the above example: there can be unemployment in one place and

vacancies elsewhere; a rise in unemployment benefit makes for increased unemployment.

The situation that arises when there are no vacancies outside an individual's present range will be discussed later.

Our present concern is with a situation in which supply and demand are spatially distributed in such a way that in some places there are vacancies because supply is inadequate, while in others there is unemployment owing to inadequate demand. In such a situation we speak of *spatial discrepancy* between supply and demand on the labour market; it can be measured in the quantitative terms of conventional economics.

Welfare discrepancies, however, can exist even while there are no vacancies or unemployed; we have already referred to that possibility earlier. In Figure 1, the welfare level of an individual who has to travel a distance d_c^1 to his work is clearly lower than that of his neighbour who only has a distance d_c^2 to cover. For the former the discrepancy between ideal and reality is Δ_1 , for the latter only Δ_2 . Neither discrepancy leads to unemployment, however: both persons find it profitable to keep or accept the job.

It may be useful to point out that the continuity of the welfare curve is not interrupted at the point where a worker becomes a non-working individual. The function follows a continuous path, declining as the distance increases, and there is no reason to associate the decision to become unemployed with an abrupt drop in welfare level. Of course, it would be different if the worker were discharged on the sole initiative of the employer, but that case is not considered here.

Professional Discrepancies

Briefly stated the argument of the previous section leads to two conclusions:

1. Unemployment and vacancies will occur simultaneously as a result of discrepancies between the spatial distribution of demand for and supply of labour.
2. Absence of unemployment and vacancies does not mean at all that there are no tensions on the labour market.

It is not difficult to understand that on the analogy of spatial discrepancies one can talk about professional discrepancies in a situation where the professional structure of supply does not match

that of demand. Again, we must be careful not to oversimplify the interpretation of the actual discrepancies.

Suppose a person has chosen a certain profession. When qualified in that profession, he will try to find a "closely related" job, that is an occupation that in terms of abilities required and social status does not deviate too far from, or is associated with, the one he has in mind in view of his talents and schooling. If he does not succeed in the face of the existing demand he will have to accept an occupation at a certain "distance" from his chosen profession. Thus a discrepancy between his actual position and the profession for which he was trained arises, a professional discrepancy which is the analogue of the spatial discrepancy treated in the previous section. The consequences may be different, however, although the means to eliminate the discrepancies run to some extent along parallel lines.

When there is a considerable distance between one's occupation and one's profession, that is the job one has been trained for, additional training or re-training could be the bridge to overcome the discrepancy: professional migration, in fact, comparable to geographical migration. People will be motivated to sacrifice time and effort for such professional migration only if the sacrifices are compensated for by higher benefits (to be interpreted as the appreciation of a higher salary and/or greater satisfaction from work minus the greater sacrifices required to fulfil the job) as compared with the satisfaction derived from unemployment benefit.

Naturally, a professional migrant will in most cases aspire to a better position after training. To be re-trained for a profession with lower pay or a lower social status will be far less acceptable than to be re-trained for a better paid or socially more appreciated profession. There are sufficient indications about the pattern of professional migration to suggest that movements contrary to the idea of career-making hardly exist. It is again the relations between demand and supply on the labour market that determine whether and to what extent re-training is useful.

Professional distance can also be bridged by geographical migration to places where there are vacancies in the occupation for which an individual has been educated. Just like the people in the previous section who could not find employment near home, he goes out to find work elsewhere; only our professional does not just look for a job, but for an occupation with certain well-defined qualities matching as near as possible his own professional training.

One can imagine the government pursuing a policy of stimulating growth in sectors employing professionals of whom there is a surplus in society as a whole. Most European countries tend to pursue in this connection a policy stimulating the tertiary sector, though it must be realized that demand for labour in various industrial sectors would better match the structure of labour supply. That problem will be discussed in more detail below. But first there are one or two things to be said about the tendency referred to earlier to prefer re-training for a profession with a higher social status than the original profession. This tendency is indeed a widespread one, occurring generally in education. In our western society, but also elsewhere (and most certainly in socialist countries) an autonomous, upward trend, reinforced by government policy, in the demand for education can be observed, resulting in a labour supply of increasing quality. It cannot be denied that there is a parallel trend in the demand for labour: industries increasingly need higher-skilled labour as production processes become more complicated, simple work is mechanised and products must meet higher requirements. But it cannot be denied either that the upward trend is stronger in supply than in demand, so that there is a growing surplus of higher-skilled workers and a shortage of lower-skilled workers or of people willing to undertake unpleasant jobs. From a market-technical point of view (but only that) the shortage can be remedied by the importation of foreign labour, but the complementary measure of exporting higher-skilled workers, is not quite so easy to carry out. Such workers will become redundant.

In spite of the importation of labour from abroad, there is still a shortage of low-skilled workers and people willing to do unskilled and unpleasant work, the more so because there is a trend in what people judge as "unpleasant" which runs parallel to the rise in prosperity. The shortage could be overcome most naturally by allowing the scarcity to be effectively expressed in the level of the reward, but that solution is hardly considered in practice, because it is cheaper, easier and less fraught with tension to import guest labour willing to work at the current wages. Tensions are sure to arise when people of low status get a rise in salary, because in that case people above them on the ladder tend to put in for a rise, too. If scarcity were given free play, the wages of people doing the unpleasant jobs could soar to a level above that of their direct bosses, and that would create extremely awkward difficulties! A similar situation would be created if the law of supply and demand

were permitted to reign with respect to persons exercising professions and occupations for which supply threatens to exceed demand.

It is hard to visualize all the long-term consequences of the developments sketched above. At any rate the lowest-paid will see their rewards rise faster than will the higher-paid. But even if supply and demand on the labour market could be balanced in that way, one may well wonder what will happen to the price of services to be carried out by that group of glorified unskilled workers, and what the influence on the quality of our life will be. Already now the quality of service can be observed to decline in sectors economising on labour, while prices rise sky-high when it is attempted to maintain traditional levels of service.

Be that as it may, present trends are certainly causing an increasing discrepancy on the labour market, and since governments are loth to apply the politically dangerous instrument of limited admittance to institutions of higher education, adjusting the demand for labour seems the only solution.

In fact, attempts in that direction are being made. Now that it begins to dawn that the tertiary sector cannot upgrade the quality of the demand for labour in any spectacular way, if at all, a movement is rapidly catching up to stimulate the quaternary, or scientific, sector, of which "the industry of knowledge" is a major part.

Besides, governments try to give support to industries that are essentially dependent on low wages and seek to move to areas where wages are still low. Often those areas are the same from which foreign labour stems, namely, the countries around the Mediterranean.

However, supposing the problems could be taken in hand in such a macro-fashion, one would still have to be aware of the dangers of thinking exclusively in terms of vacancies and unemployment, forgetting the, perhaps very many, workers who experience great tensions between the profession they aspire to and the occupation they actually fulfil, tensions that do not find expression in unemployment or vacancies. Unemployment and vacancies are no more than the extreme symptoms of a much wider underlying problem, namely that of matching the structure of total demand with the structure of total supply, and of the total tension that occurs when the structures are spatially and professionally out of tune. The field of vision has been so much narrowed by the handling of figures, in particular unemployment figures, that the problems of the 95 per cent who are working have been all but

forgotten in favour of the 5 per cent officially registered as unemployed. This first conclusion seems to be wide in scope and merits to be elaborated later on.

These preliminary considerations are concluded by a further discussion not of economic growth and employment, but rather of social well-being and labour-market discrepancies.

Mobility of supply

The previous discussion concluded that there are, in fact, two kinds of discrepancies, one caused by the geographical distance between work place and residence, and one caused by the professional distance between the actual and the chosen profession. But this describes only part of reality. Tensions can also occur on account of the atmosphere within the establishment, the attitude of colleagues and management, the insecurity of an existence in dependence on the nature and quality of the products manufactured, etc. These are all factors that contribute to the total tension to which an individual is subjected in his work situation. Moreover, the living situation, the quality of the house as such, the relation to neighbours, the quality of the neighbourhood, the degree of air pollution, etc., can be the cause of tension. With every combination of workplace and residence the tension is differently composed, but it is always present.

The discussion will not be concerned with all the aspects identified here, but only with the spatial and professional aspects. To begin with, it is necessary to point out that spatial tension and professional tension occur simultaneously, in other words, that tensions are cumulative. For almost everybody there is a discrepancy between real commuting distance and desired commuting distance as well as one between actual occupation and desired occupation. To find the total tension to which the individual is exposed, the two have to be "added up", so to speak. Being particularly interested in the situation created by discrepancies between the spatial and professional structures of the demand for and the supply of labour, it is, naturally, important to find an answer to the question to what extent the structures tend to come closer to each other because of the tensions to which individuals are exposed. Because this paper only refers to discrepancies experienced by employees, any adjustment between the two structures will have to be interpreted here as an adjustment of supply to demand. The adaptation of the structure of demand to that of

supply, though occasionally hinted at, will be discussed more completely later.

For the moment the question is: to what actions will existing tensions incite an employee, and to what extent that will happen, that is, the question of the mobility of labour in a geographical as well as a professional sense. Because the relevant factors are different, it seems best to treat geographical and professional mobility separately, dropping the analogy.

Mobility in the geographical sense is defined as the propensity to change residence, given a certain impulse. Those responding strongly to a slight possibility of improving their position are called mobile, and those who respond sluggishly or not at all even to a strong impulse are called immobile. The actual adjustment is, of course, the result of the responsiveness as well as the strength of the impulse. In the framework of the labour-market problem it is first of all the strength of the impulse that interests us. It seems meaningful to define this impulse as the improvement of position that can be achieved by migrating, calculated, of course, over the years for which the improved position is held. It follows at once that the impulse towards migration will be considerably less for older people than for young persons, who will be able to enjoy the advantages over a much longer period. The resulting relatively smaller migration volume of older people is often, wrongly, interpreted as the consequence of lesser mobility; in all probability the smaller benefits to be gained by them from migration plays an essentially more important role.

Because older people migrate relatively less than younger people, their adjustment to the structure of demand for labour will be proceeding less smoothly and relatively higher unemployment can be expected merely on account of supply factors. Ageing of the active population, such as we have known during the last few decades since birth rates began to decline rapidly, consequently carries with it a tendency towards increasing unemployment.

Along with the undeniable trend just described, there is a second one, no less important: the increasing participation of women, especially married women, in business life. If a family had to move house because the husband changes job, the wife would have to change jobs too. Now if there is little discrepancy between the situation the wife desires and the one she actually finds at her place of work, that is, if she is relatively satisfied with the existing situation, she will probably lose by changing jobs. It is an obvious assumption that both discrepancies, the wife's as well as the

husband's, will be considered in the decision whether or not to migrate. But that would mean that the impulse towards migration will be less than if the decision had been taken on the basis of the man's position alone. Only in the case that husband and wife are both dissatisfied with their present position will they decide to migrate sooner than on account of the man's position alone. In general it can be stated that the more family members take part in the production process, the smaller the propensity of the family as a whole to migrate will be. That, like the phenomenon of ageing, will lead to a diminishing propensity to move as time goes on.

A third factor working in the same direction in the long run is the increasing tendency found almost universally to level out incomes. As that tendency is progressively realized in practice, and incomes are approaching one another, the possibilities for bettering oneself will decrease and the impulse to migrate with them. It may be remarked here that such a development may be favourable for the occupation of the lowest-classified jobs, because the reward for these jobs will rise in relation to that for higher-skilled occupations.

A fourth factor arises from governmental regional-policy measures aiming at the diminishing of income differences between regions. Frequently governments make promises in this respect, suggesting that improvements can be achieved within a relatively short period of time. It stands to reason that inhabitants of backward regions are thus encouraged to nurture hopes for the future, and will feel less inclined to migrate. Of course, actual behaviour will also depend on actual developments, but it is obvious that when promises have been made, there will be pressure from the regions for promises that go one step farther; thus a mechanism is created that maintains high expectations.

Unemployment benefits have been mentioned already. It may be repeated that when there is a choice between becoming unemployed and migration, the inclination towards the latter will be less as the benefit becomes higher.

Actually all factors work in the same direction. The ageing active population, the greater participation of women, the tendency to level incomes progressively, regional policy, and the tendency to raise unemployment benefits: all these make for a decreasing propensity to adjust in a spatial sense the structure of labour supply to the structure of demand for labour, and the result is a higher proportion of unemployed as well as a proportionally higher number of vacancies.

Concerning the expectations with respect to professional migration, again, more equality of income and higher unemployment benefits play a role; their influence goes in the same direction. Re-training for another profession, which may offer more prospects but without expressing them in a higher remuneration, is hardly attractive for a great number of people, and will become less so as the chance of becoming unemployed in their present occupation carries smaller risks because of the increasing unemployment benefits.

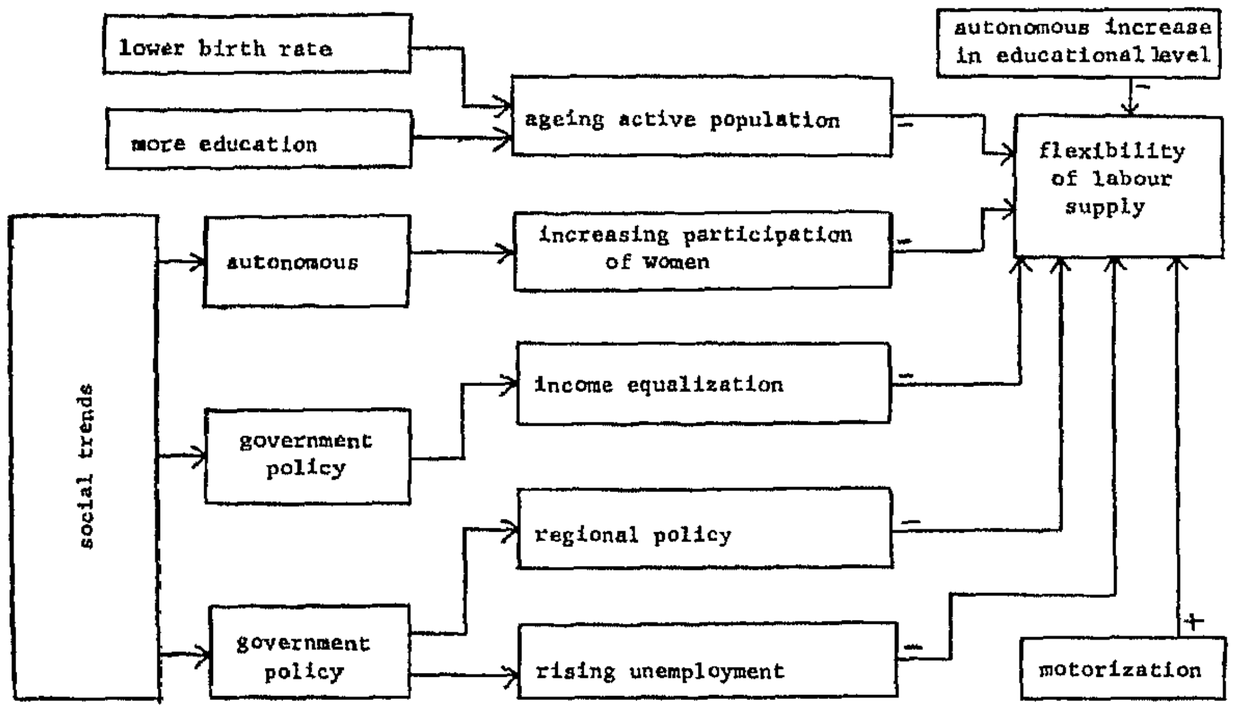
Obviously, the above does not mean that developments will lead to very little interest being taken in re-training, but it does mean that the interest will show a decreasing trend.

The greatest obstacle to matching the professional structures of supply and demand will be the increasing trend towards increasing the quality of the supply, which was mentioned earlier. It seems as if on that score the co-operation between ministers of Education, Economic Affairs, and Social Affairs leaves much to be desired. No longer can it be maintained, under the present social constellation, that a so-called higher education is always and for everyone better than a so-called lower education. That would be true only if a higher-educated individual had no higher expectations from his future profession than his less high-brow or less-skilled brother. For the greater part the present education system trains for a specific, well-defined profession, and it is understandable that a man or woman, being thus trained, expects to find a place in precisely that profession. It will be extremely difficult for him or her to accept that his training should be looked upon as general education, giving no title whatsoever for being employed in his specific profession. As has been remarked before, the present tendency will lead to an increasing shortage of lower-skilled workers and a surplus of higher-skilled workers. The former can be remedied by importing foreign labour, with all the attendant disadvantages; the surplus of higher personnel will lead to unemployment, and for those who do find employment, serious discrepancy between their occupation and their real profession.

Summarising, it can be said that in the present society there are quite a number of developments tending to make the structure of labour supply spatially and professionally less flexible as far as the active population in a region is concerned. At the same time there is a tendency for the net growth of the active population, those entering the production process less those being pensioned off, with corrections for those who leave the labour force for other

reasons (death, handicap, etc.), to have such a high level of education as to bring about simultaneous surpluses and shortages within the same labour market. Generally speaking, discrepancies on the labour market will show an increasing trend.

FIGURE 2: *Presentation of factors affecting the flexibility of labour supply*



In Figure 2[1] the supply-side developments and influences described have been reproduced schematically. It becomes apparent that all factors have a negative effect on the flexibility of labour supply, with one exception: motorization works positively, bringing an increasing number of work places within reach of a given residence. All the other factors make supply less flexible, either by a negative effect on the strength of the impulse, or by a negative effect on mobility itself.

Wages

After the analysis presented above it is useful to give some thoughts to the role of wages in the developments towards an inflexible labourmarket. Analyses in the Netherlands[2] seem to have proved sufficiently that some moderation of wage demands in future would contribute considerably to a decrease in unemploy-

[1] The box labelled "rising unemployment" should be labelled "rising unemployment benefits."

[2] E.g. H. den Hartog, Th. C. M. van de Klundert en H. S. Tjan, *De strukturele ontwikkeling van de werkgelegenheid in macro-economisch perspectief*. Preadvies Vereniging voor de Staathuishoudkunde, The Hague, 1975.

ment. Accordingly, voices have already been raised in the Netherlands in favour of the Government conducting a policy of wage control in order to check the so far more or less autonomous rise of wages and make wages, in the Netherlands, once more an instrument of economic policy.[1] Actually, wages form a factor that occurs simultaneously on the demand side and on the supply side. Being especially concerned with the supply side, it must be emphasized that a real rise in wages, ceteris paribus, will lead to an improvement in the relation between desired situation and actual situation, diminishing the discrepancies on the labour market. But that applies, of course, only to those who are working and continue working after the wage increase. Should the wage increase cause such an increase in costs that dismissals become inevitable, then the discrepancy between desirability and actuality will become greater for those workers who lose their jobs, in other words the distribution of discrepancies among those who are willing to work becomes less favourable. In view of the weight normally attached to increased discrepancy for those who are dismissed, the more so if their numbers tend to grow continuously, such a development must be considered adverse, in spite of the diminishing of discrepancy for those who keep their jobs. It introduces a structural trend towards more unemployment, which contributes to the rigidity already favoured by other developments.

Discrepancies on the Demand Side

Spatial discrepancies

It is worth noticing and at the same time remarkable that most growth and business-cycle theories entirely disregard the autonomous influence of the spatial dimensions of the area under survey on the path of growth and business-cycle processes. That attitude is reflected in the structure and lay-out of the theoretical and empirical models developed to represent economic relations. Econometric models applied to such countries as the Netherlands and Belgium resemble very closely those for the United States, although the spatial pattern of economic relations in the latter country is totally different from that in small countries like the former, which in this context should rather be treated as regions.

[1] J. van den Doel, C. de Galan en J. Tinbergen, *Pleidooi voor een geleide loonpolitiek*, *ESB*, Vol. 61 Nr. 3044, March 17, 1976.

The macro-economic approach thus favoured leads to problems in the description of a country's international trade pattern. To a country like the United States, "world trade" is a relatively unimportant quantity, while for many small countries it is the main exogenous variable. The picture may be a bit overdrawn, but it illustrates adequately that relations are subject to spatial constraints. For small countries or regions the boundaries limiting a great number of activities are much wider than their administrative frontiers, while very large countries find their frontiers too wide to observe clearly what is the relevant geographical space for many an activity.

In this paper the macro approach, described in the previous paragraphs in somewhat exaggerated terms, will be left for what it is, and attention will be given to a few other aspects of economic activities that are very important for describing the labour-market process, notably the spatial and professional aspects.

The discussion of spatial discrepancies on the supply side started from the assumption that an individual experiences it as a disadvantage to commute between the place where he lives and the place where he works. His well-being decreases, ceteris paribus, as the commuting distance increases; it increases as the distance becomes shorter. But on the demand side, too, there are disadvantages involved in bridging distances.

Establishments transform capital, raw materials and ancillary materials, services, and labour into goods and services. Thus, they have relations with numerous markets for inputs and outputs. Because these markets are spread across space, to fulfil their transforming function establishments must continuously bridge the distances between their location and the input and output markets, at costs more or less proportional to the distances. These costs not only include transportation costs proper, but also, more generally, the costs associated with maintaining the necessary contacts with the various markets, that is, communication costs.

Without lengthy academic discussion it may safely be stated that an entrepreneur's principal objective is to make a profit in order to safeguard the continuity of the production unit, in principle at its present location. To that end, a balanced ratio between revenues and costs will have to be maintained. Increased distances between an establishment's location and its relevant markets will lead, ceteris paribus, to higher costs, thus representing a disadvantage that in the long run may even jeopardize continuity at the present

location; as a consequence the establishment may have to be moved or even closed down.

Given a certain envisaged revenue pattern, and with the profit-making purpose in mind, the desirable cost pattern can be derived; this pattern may show a discrepancy in respect of the actual cost pattern. Higher costs because of longer transportation distances will increase the discrepancy between the desired (lower) costs and the actual costs. In the same way as for employees, for employers, too, longer distances lead to greater discrepancy between the desired and actual situations.

So far the discussion has concerned an entrepreneur's distance problems in general, that is to say, the disadvantages that may be associated with bridging distances to markets for production factors and products. Now it is possible to try to find out whether the partial spatial labour-market situation can be discrepancy-increasing or -decreasing for an entrepreneur. The answer is yes if, and to the extent that, disadvantages (costs) to the entrepreneur are involved in the necessity for workers of the establishment to commute over certain distances.

In general, for an employer there are no direct costs associated with his employees' commuting. In times of labour shortage it does happen, though, that he is prepared to offer a compensation, in the form of reimbursement of travel costs, to certain workers who, living at considerable distance from the establishment, are disinclined to offer their labour to it. Sometimes large firms even maintain special commuting services. In such cases the spatial discrepancies otherwise experienced by workers are partially shifted on to the entrepreneur.

An interesting but somewhat speculative assumption is that employees who have to travel far between home and job may show phenomena due to fatigue that have an adverse effect on their productivity and hence on the labour costs per unit of production.

With a labour-intensive establishment that frequently needs to replace and extend its stock of labour, location at a great distance from the residences of workers could also lead to high recruitment costs. Because of the distance recruiting will have to be dispersed and, owing to the unwillingness of workers to take a job at a considerable distance from home, more intensive. That is even more the case if other establishments competing on the labour market are located nearer the residential areas of labour supply, and therefore offer more attractive opportunities to workers. In such a situation a labour contract is often not signed unless the entre-

preneur can persuade the worker to choose a new residence in the neighbourhood of the establishment's location. To that end it may be necessary to grant the worker a house-moving allowance.

From what has been said it can be derived that recruitment costs as a rule will increase with the distance between the location of the establishment and the residences of labour supply.

No less than to the supplier of labour, long commuting distances can be less satisfactory than shorter ones to the demander of labour. Absence of vacancies in establishments does not, therefore, prove that to the entrepreneur the labour-market situation is balanced. How far the situation on the labour market, in respect of the demand for labour, is removed from equilibrium, could perhaps be measured in terms of the discrepancy between the actual labour-market situation as expressed in the costs of labour (including distance costs) in relation to its productivity, and the desired situation, as it can be inferred from the entrepreneur's efforts towards continuity.

As indicated earlier, spatial labour-market discrepancies represent only a part of the spatial-discrepancy problems. Spatial discrepancies can be associated with other inputs and with outputs. The entrepreneur, too, will have to weigh up, "intrapersonally", the pros and cons of a new location. While a worker will consider mainly his living and working situations, an entrepreneur will implicitly have to weigh the consequences of his locational choice for the communication costs of *all* inputs and ouputs. While a worker in his weighing will be psychically oriented, an entrepreneur can be objective by expressing advantages and disadvantages of a certain location in costs, though in practice the calculation may give problems.

Choosing the optimum location is not, however, a continuous minimisation problem. The entrepreneur is up against discontinuities. Many products can easily be transported over fairly long distances. If only such products were involved in the location choice, the problem would indeed be one of continuous minimisation, and the industry could be established, in principle, wherever the communication costs to be paid are at a minimum. But raw materials like ores and crude oil have to be mined or won where they are found. Most services can only be produced on the spot. Something similar can be said of the factor labour. Internationally and interregionally (if regions are large enough) commuting distances are subject to certain limits. That means that an entrepreneur is often compelled to choose for his location those regions

where the services he requires and the labour supply he needs are already available in sufficient quantities and satisfactory qualities.

The discontinuity in matters of locational choice may imply that an entrepreneur, once established at a new location, will have to accept a number of partial spatial discrepancies. Should the spatial structure of supply alter, or should changed production techniques lead to different requirements in the way of production factors, the entrepreneur may consider a new change of location in order to (further) reduce certain spatial discrepancies.

What has been said in the previous paragraphs might easily suggest that entrepreneurs are continually adjusting to changed circumstances, changing locations whenever that seems to offer advantages. Reality is quite different, however. In practice, laws of continuity prevail, and a strong preference for continuing production at a given location. The present location of an establishment often can only be explained by factors dating from very long ago. And frequently discrepancies can be identified between the profits that could be gained elsewhere and those achieved at the present location. Only when certain constraints of profitability are violated at the location chosen in the past (say, when losses are incurred year after year) will other locational possibilities be considered. Often the establishment in question comes to an inglorious end, while activities similar to those it was carrying on come to great prosperity elsewhere. Illustrative examples are the leather industry, the textile industry, and the clothing industry, which from highly developed Western European countries have moved south and southeast to low-wage countries with ample supply of unskilled and low-skilled workers.

In discussing mobility, the problems of the preference for continuing at the present location and delayed adjustment to altered circumstances must be considered. Notably, how has it come about that industries are so little inclined to adjust, are so little mobile? For the present, it may be noted that an establishment is involved in a complicated network of relations, each with its own spatial dimension, and that a favourable position in one respect need not imply an advantageous situation in other respects. Location of an establishment at a relatively long distance from the residences of labour supply may be acceptable in view of totally different factors, and on the whole its position may be better than that of another establishment, which may be close to labour supply but, precisely because of its location there, cannot benefit from other advantages. So, in respect of the demand for labour as well,

it may be stated that reduction of a very long distance between an establishment's location and the residential areas of workers leads to an improved position of the industry only in so far as the partial improvement does not entail greater disadvantages in relation to the other markets for inputs and outputs.

It can also be stated that, if the government and other suppliers of transport infrastructure succeeded in shortening not only the commuting distances, but also the other transportation distances, an advantage relative to all costs and revenue components of the production process could be reaped. How a policy to that effect would have to be conducted goes beyond the range of the present contribution, except for referring to the few relevant remarks made when spatial supply discrepancies were discussed.

Professional Discrepancies

The transformation of capital, labour, and other production factors into goods and services is accomplished by means of a certain production technique. This production technique determines the extent to which each production factor is to be enlisted. Traditionally, the science of economics has been concerned mainly with the effect of the input of capital and labour on the production outcome, complementarity and possibility of substitution being among the topics studied. The energy problem has made it clear that the approach hitherto followed has lead to a narrowing of vision. Energy no longer has a neutral part in the transformation process; in fact, it has become an indispensable factor in the production function. The same applies to other "non-scarce" inputs. As we have pointed out earlier, practically every input has a spatial dimension. Even if inputs were supplied free that dimension will play a role, because time, cost and effort have to be sacrificed to acquire the inputs effectively.

Leontief's merit is that he has tried to combine in one table all interdependences between economic actors concerned in the supply of goods and services. However, the so-called input-output table only represents demand relations *ex post*. One of the present authors has made an effort to include in such a table elements of both demand and supply, as well as their spatial distribution, generalizing the input-output model into the so-called attraction model.[1]

[1] Leo H. Klaassen, *Methods of Selecting Industries for Depressed Areas*, OECD, Paris, 1967.

The present labour-market problems, manifesting themselves in an absolute shortage of work positions, surpluses of highly skilled workers, and the recruiting of foreign unskilled labour, make it questionable if labour can still be conceived of as one homogeneous production factor in our economic arguments. Attempts have been made, therefore, to make a distinction in the production function according to the quality of labour. The present discussion will not yield a water-tight theory of labour input; once again the approach will be fragmentary, but it may give some insights.

The production technique determines the extent to which production factors must be put in to realize a certain production outcome. With respect to the labour factor that statement must be understood to mean that the production technique, which, after all, is essentially incorporated in the stock of capital goods, determines the total package of actions to be performed. These actions can be grouped into tasks, each comprising a group of more or less related actions. The tasks, in turn, can be arranged according the positions to be filled, in such a way that every position offers a group of tasks tailored to fit the capacities of one single worker. Next, workers whom the positions fit can be recruited. The workers recruited are related to one another in a certain way, partly horizontally, partly vertically (hierarchically). The network of relations can be denoted as the organisation structure.

In describing the whole process it should be kept in mind that it is not a very flexible one. The process of decision-making that underlies the structuring proceeds along traditional paths; often decisions are taken implicitly, alternative possibilities being hardly if at all recognised. The professional structure of the demand for labour that is the final outcome of the production technique may have been influenced to some extent by the interplay between workers' abilities and the requirements of the production process, but the adjustments that ought to be made are continuously frustrated by traditional relations. Consequently they are carried through with considerable delay and never completely. The present shortages of workers who are prepared to exercise certain unskilled professions, in spite of relatively high unemployment also among unskilled workers, clearly prove that.

The foregoing should not be understood to mean literally that there is complete rigidity in the short run. In engaging employees, the entrepreneur will respect certain margins, because he, too, recognises certain associations between occupations. When the

labour market is tight, especially the sub-markets on which he depends, the entrepreneur will be inclined to enlist workers whose abilities do not conform exactly to the requirements of particular positions. To put it another way: he will be inclined in that situation to accept workers who will be less productive in occupying the position offered than would be the category of workers' whom that position has been made to fit. Entrepreneurs, like workers, will recognise "distances" between the various professions that exist in society. As the labour-market situation requires, they will accept workers trained or experienced in professions that are some distance removed from the profession that, strictly speaking, would be required for the occupation of some particular position. Thus, they will experience professional discrepancies that are analogous to those felt by workers.

Professional demand discrepancies, or, in more general terms, professional distances with respect to demand for labour, need not coincide with the distances recognized by labour supply. The professional distances of which supply is aware are associated first and foremost with the psychical satisfaction subjects expect to draw from making their skills available, and from the social status and the income connected with the occupation. For those demanding labour the most important element is the productivity to be ascribed to a worker skilled in one profession and exercising another, less the reward claimed for it.

Still, both appreciations should not be considered as unrelated. Supplier and demander do refer in some degree to each other's appreciations. A worker is, indeed, concerned with the fact that entrepreneurs do not accept certain distances, however small he himself may think them at first sight. As a consequence, suppliers may alter their valuation scales. On the other hand, an entrepreneur will have to take into account that while he may think that two occupations are close to each other because they demand very nearly the same kind of training, workers may associate with one of them relatively many unfavourable aspects (low social status, low income) and so refuse to accept it, or if they take the job are so dissatisfied that their productivity is anyhow lower than the entrepreneur had initially assumed.

As for supply, measures can be mentioned in respect of the demand for labour that aim at reduction of the discrepancy between the profession required for an available position and the profession of the potential occupier of that position. A measure that has already been referred to in connection with labour supply is the

provision of re-training and additional training. Such a measure is interesting to the demander for labour only if the costs associated with creating training facilities and loss of productivity during the training period do not exceed the revenues of the training in the way of more rapid, stable increase of productivity.

Another measure that is frequently applied is to suppress certain positions and introduce mechanisation and automation: to replace labour with capital. This measure has led to fast expulsion of unskilled and low-skilled labour mainly from agriculture and industry. In most cases it also has consequences for the other positions in an establishment. We have already pointed out that changes in production technique may necessitate changes in the entire professional structure. Old tasks are being taken over by machines, but new tasks, associated with controlling and maintaining the capital installations, emerge. Some tasks will get a different content, for instance those in the sphere of leadership and inspection. Owing to intensified capital input and the development of new sectors, the level of training required for positions to be filled has steadily risen, a favourable evolution, but, as repeatedly observed, not fast enough to keep abreast of the rising level of training of the professional population.

Contrary to the suggestion made in the previous paragraphs, the process of capital intensification should not be conceived of as a continual breakdown of existing structures and as a drastic renovation. Rather it seems a gradual evolution embedded in traditional relations, and only resulting in marginal adjustments of the existing situation. When discrepancies occur, they should be seen essentially as clear divergences of various trends, but not as a clash between suddenly changed conceptions and existing inflexible relations. That discrepancies can be persistent is first and foremost because adjustments are not made fast enough; still, they *are* made!

Apart from training facilities and greater capital intensity as means to adjust the distances between required and actual profession, there is another way to the same end: changing the professional structure of the demand for labour in such a way that the actions to be performed remain the same in their totality, while being distributed in a different way among the positions. In that way the attractiveness of certain positions now rejected by indigenous unskilled workers could be enhanced, unattractive parts of the work being spread among the other positions.

Yet another possibility to be considered is a change in the reward structure. By adjusting this structure, for instance by rewarding

interesting and satisfying work relatively less than monotonous and unpleasant work, the distance between professions offered and professions demanded on the labour market could be reduced; relatively high-skilled individuals might even be found willing to perform lower-skilled work. However, the reward structure is extraordinarily rigid, and recruiting foreign labour seems an easier and cheaper way to meet shortages of unskilled labour.

In practice, when discrepancies are manifest, by no means all possibilities of adjustment are taken advantage of. The explanation is often insufficient knowledge of potential opportunities. Costs may also be a factor, although remarkably few serious cost calculations are made before actions are taken.[1] As a consequence of neglecting possibilities, planned activities are sometimes given up, which can jeopardise employment on seemingly balanced submarkets. Inability to adjust, or to adjust adequately, can also lead to a relative increase in labour costs. If these cannot be passed on in the prices, for example because of sharp competition, the establishment will get into difficulties. Consideration can then be given to moving the establishment to areas where the structure of labour supply better matches the structure of demand for labour. Evidently, both professional and spatial discrepancies can give rise to geographical migration of industries.

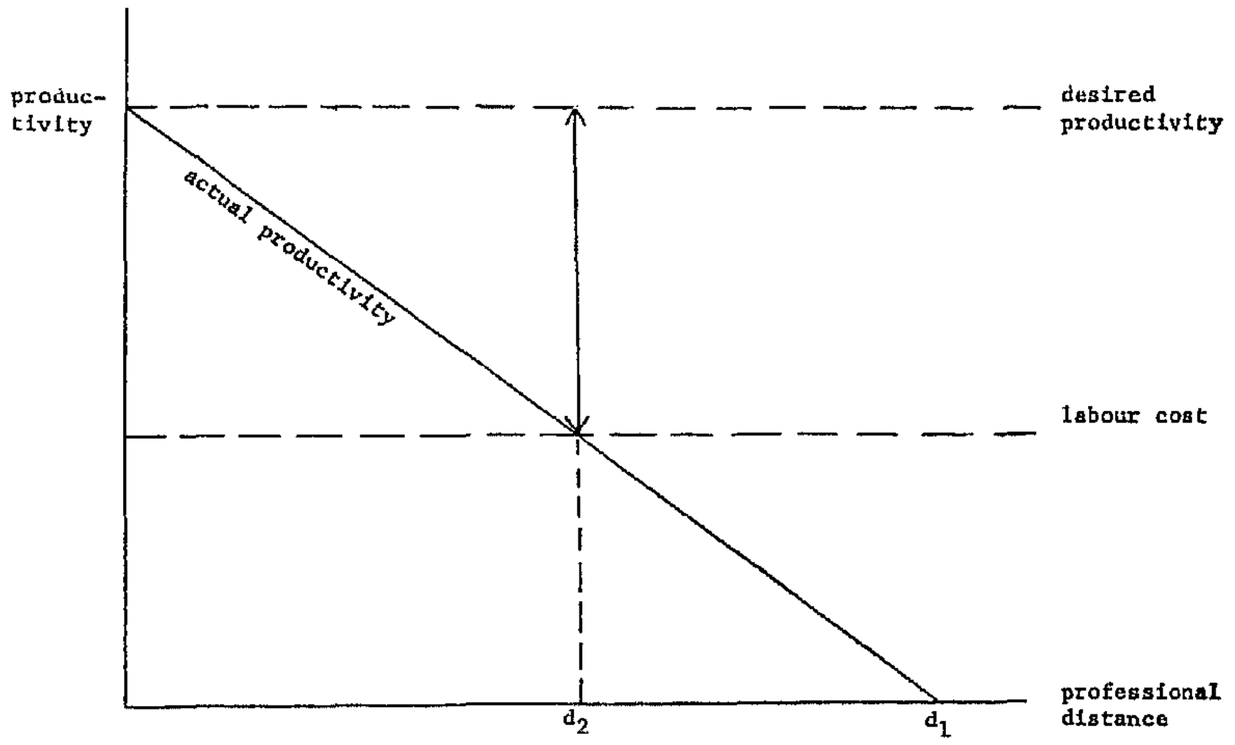
There is every reason to wonder whether "vacancies" give sufficient insight into the degree to which the tensions described in the previous paragraphs occur. Most of the problems outlined relate to occupied positions. Moreover, establishments may have accomplished certain adjustments without the discrepancies experienced becoming manifest in vacancies or unemployment.

Indeed, when vacancies occur in a situation of ample supply of labour, there is a weighing problem to contend with. This may be illustrated by means of Figure 3[2]. On the horizontal axis the professional distance as recognised by the entrepreneur has been measured; on the vertical axis the productive contribution of a professional worker when occupying a position is reproduced, expressed in monetary terms.

[1] In an investigation into shift-working in eighteen industries it became evident that only a minor portion of the industries examined had ever made calculations in relation to decisions on the introduction of shift working, although fifteen industries had indeed introduced it. See J. R. de Jong, *Ploegenarbeid, Waarom, wanneer en hoe?*, Leiden, 1974, p. 33.

[2] The vertical line between the "desired productivity" and "labour cost" lines should be labelled "$\triangle$."

FIGURE 3: *Professional distance and the occupation of positions.*



The declining straight line indicates how productivity diminishes as the profession (skill) of the worker to be enlisted is further removed from the profession needed to fill the vacancy. Should the entrepreneur reward the worker according to his productivity, he would not recruit workers skilled in a profession that is at a distance of more than d_1 from the profession that exactly fits the available position. If no workers offer themselves with a profession that is nearer than d_1 , the position remains open (vacancy). If the wages are determined nearly autonomously, for instance by collective negotiations as to its development, and by traditional relations as to its structure, the professional distance just acceptable to him, that is to say the professional distance at which productivity and reward (including other labour cost) just match, will shift to the left, to the point where labour costs once more equal productivity. In Figure 3 that happens at d_2 . To the extent that only workers apply skilled in professions more than d_2 removed from the "ideal" profession, the entrepreneur will prefer vacancies to engaging workers, in spite of possible high unemployment.

The employment of workers with a profession at distance d_2 does not yet bring about an ideal situation. There remains a discrepancy Δ between the desired and the actual net productivity (productivity minus labour cost). In this situation it is, however, just acceptable for the entrepreneur to have the position occupied. As the professional distance between position offered and labour supplied becomes less, the discrepancy experienced by the entrepreneur diminishes.

The foregoing discussion has explained in a plausible way why the number of vacancies says so little about the real labour-market situation. Vacancies apparently do not represent a given supply of available work positions in absolute terms. Unfulfilled demand is among others a function of the professional distances that are acceptable to entrepreneurs, and those in turn are a function of professional wages and productivity. Moreover a vacancy filled need not produce a situation that is wholly satisfying to the entrepreneur, and therefore balanced. When the position is occupied, there may still remain discrepancies motivating the entrepreneur to look for adjustments.

Finally, some remarks about the relations in Figure 3 in respect of the present difficult labour-market situation. In the past decade, in the rich Western European countries labour productivity has increased enormously. The increase is expressed in Figure 3 in an upward shift of the productivity line. In theory that should lead to a shift to the right of the acceptable professional distance, that is, to an easier labour market. In practice, however, the increase in productivity has exclusively benefited the factor labour; the rise in wages has even exceeded the rise in productivity. The wage increase is expressed in Figure 3 by an upward shift of the labour-costs line. In theory the acceptable professional distances should thus be shortened and the labour market tightened. It is not difficult to understand that with wage increases exceeding productivity increases, the professional distance just acceptable to entrepreneurs will in balance shift to the left.

So, recent developments have led to a situation in which demanders for labour will act more and more selectively when recruiting labour for the occupation of available jobs. After the general fall in demand for labour, this situation could be a cause of present unemployment. Anyhow it constitutes an important structural component of current problems. To find an answer to the question to what extent an increase in demand for labour will bring about a fall in unemployment, it is important to have an insight into, among other things, the evolution of the selectiveness of entrepreneurs' recruiting policy in relation to the development of the professional and spatial structure of labour supply. With the latter aspect, the selectiveness of labour supply will also have to be examined.

Mobility of Demand

The spatial and professional discrepancies experienced by those demanding labour have been discussed extensively, and possible

adjustment reactions have been investigated. Now attention may be given once more to the reactions by entrepreneurs to labour-market discrepancies experienced, and in particular an answer can be attempted to the question to what extent they are inclined to adjust to changing labour-market situations. Notably an attempt will be made at indicating in what direction their inclination is likely to develop in the course of time.

Mobility was the term used to indicate the propensity to adjust with respect to labour supply. The same term will be introduced here: geographical mobility will be used to indicate the inclination to change location, and professional mobility to denote the propensity to change the professional structure. Because the two aspects of mobility, or flexibility, are affected by different factors, they will be dealt with not simultaneously but successively.

In the same way as geographical migration of persons is the resultant of the strength of the impulse to move and the inclination to respond to that impulse, the move of an establishment can be seen as the resultant of the migration impulse and the establishment's mobility. The migration impulse could be defined as the improvement of the profit position over the period for which that improvement holds. In practice an entrepreneur will not respond to every impulse, every chance of improving his position. Laws of continuity hamper continual migration movements of a production unit, as already mentioned. As a rule an entrepreneur will try to continue activities as long as possible at a location once chosen. It is often not before a production unit is in danger of making permanent losses that moving to another location is considered. The preference for continuity is, indeed, one of the major factors explaining the low geographic mobility of establishments.

Efforts to maintain continuity can be reinforced or weakened by a number of factors, among which an important one is the position that the labour stock has come to occupy within the establishment in the course of time. It cannot be denied that the position of the labour factor in an establishment has become stronger in several respects:

introduction and improvement of social laws have led to a progressively better legal status of employees. Workers can now be dismissed only for weighty reasons, such as, for example, a permanent situation of losses;

humanised ideas about work and labour have led not only to the improved social laws already mentioned, but also to entrepreneurs

recognising and respecting the value of "the conservation of employment";

the power of trade unions has undeniably been strengthened. In labour conflicts and impending close-downs of firms or establishments, more and more frequently representatives of trade unions are consulted; their aim will be first and foremost to maintain as much as possible the existing employment;

developments in education have accelerated the emancipation process many groups in society are going through. Within establishments that process has tended to diminish the distance between management and staff. Employees are involved in the consultations about important decisions with regard to the production household, to an as yet limited, but everincreasing extent. Naturally, the interests of employees will thus be given more and more emphasis;

a process of progressive splitting-up of work has been going on for decades. For considerations of efficiency, tasks were split off from functions that were previously relatively heterogeneous in content. Those tasks were then combined into new functions of a relatively homogeneous content. This process of work-splitting, of which a simplified description has been given here, resulted in an increasing number of specialisations, giving rise to an equal number of sub-markets. The process has been carried through to such an extent that there are now specialisations specific to branches and even to individual industries.

Thus, recruiting has become more difficult for the entrepreneur and he has become more dependent on the people already employed in the establishment, with their qualities partly obtained by experience and training within that establishment. Moving the establishment elsewhere would, in view of the limited inclination of workers to migrate, confront the entrepreneur with considerable, perhaps unsurmountable, difficulties at the new location;

the Netherlands Government is increasingly prepared to grant some form of subsidy to establishments that would otherwise be compelled to dismiss large numbers of workers. Although a policy aiming at the conservation of employment is socially desirable, such granting of subsidies tends to delay the adjustment process, which nevertheless is often inevitable and in the long run desirable.

Owing to the undeniable reinforcement of the labour factor within establishments, attempts to reduce the number of employees meet with increasing resistance. Now moving an establishment

elsewhere need not in all cases lead to loss of places of employment. But because workers have little inclination to migrate geographically, an establishment that moves to another region is apt to lose a portion of its workers, who will have to be replaced by new workers recruited at the new location. There must be very ponderous reasons before an entrepreneur will take the hazardous step of locating his establishment elsewhere, thus cutting the tie with a large portion of the original personnel.

It must be remarked that the staff of an establishment is not a constant, given quantity. Through deaths, pensioning-off, and departure for other reasons the number of employed workers is constantly diminished. Positions that have become vacant, or are being created, will have to be occupied by means of recruiting. If no new workers are recruited, the staff will shrink "automatically". In practice one sees, therefore, that the process of moving in most cases can only be indicated as a process of marginal geographical substitution: at certain places economic activities are gradually cut down, to be expanded elsewhere. For that reason the substitution process will be restrained by the decrease in economic growth; fewer possibilities of expansion will further diminish the geographical mobility of the demand for labour.

Apart from the influence of economic growth on geographical mobility, the other side of the medal, the influence of the wastage of staff, has already been referred to. It will be clear that according as the staff ages, natural wastage will increase. With birth figures going down, in the long run the average age of the working population is likely to rise, a development that will to some extent compensate for the decrease in geographical mobility due to diminished economic growth.

The strengthened position of the labour factor, and the consequences with respect to the desire for continuity and the geographical mobility of establishments, have been pointed out. It has been shown that changed ideas about the position of labour and a shift in power positions played a dominant role in this connection. The paper now turns to the possible influence of the capital factor on the tendency towards continuity at the present location. To avoid misunderstanding it is necessary to state that this paper is not concerned with matters of ownership and the related power positions within an establishment. It considers only the influence of physical capital on a decision whether or not to move the establishment, cost aspects taking pride of place.

To say that a process of progressive capital intensification has

occurred in the production system is to state the obvious. Yet it is important to refer to this process, because the enormous rise in the capital value of available capital goods, in relation to the productive value, has made establishments increasingly dependent as far as their opportunity of adjustment is concerned, on the volume and nature of the capital installations present. Geographical migration can only be accomplished without loss of capital if the geographical substitution process does not proceed more rapidly than the depreciation of the available stock of capital goods. Here, too, it is true that substitution will be achieved more easily if economic growth is stronger. A lower rate of economic growth means, also with respect to the factor of physical capital, a decrease in the geographical mobility of the demand for labour.

It would be beyond the range of this contribution to go into the details of a possible influence of the remaining production factors on geographical mobility of establishments. Increased division of work has created an involved web of relations around establishments, which renders moving, particularly long-distance moving, an awesome undertaking. In this context the strong ties woven in the course of years between basic industries and their suppliers and customers should not be forgotten: moving such basic industries could entail the break-up of industrial complexes.

Speaking about factors that affect geographical mobility it should be observed that, apart from labour-market and capital factors, sectoral developments are not without importance for the possibility of moving. The quantitative growth of the service sector, including the public sector, is relevant because of the strong geographical relations that important parts of it have with the location of consumer markets.

In discussing the mobility of labour supply, the influence of the government's regional policy, aiming at levelling out the income discrepancies between regions, has already been pointed out. In fact, this policy tends to make not only the supply of labour, but also the demand for labour less geographically mobile. As regional differences in wages become smaller, establishments have less chance of saving on wages by migrating from a relatively "expensive" to a relatively "cheap" region. Naturally, the impulse to move will be lessened only in so far as the relevant location area of the activities involved does not transgress national frontiers. When the relevant region comprises areas outside the national frontier, regional policy can in some cases promote mobility, for if regional

policy succeeds in raising the wage level in regions that so far had remained behind, industries can be motivated to leave such regions and establish themselves in foreign regions with a lower wage level.

Other facets of regional policy may have similar effects. Upgrading and equalising of environmental and other requirements made of investments on the regional level may restrain domestic mobility of establishments, but also lead to the expulsion of activities whose relevant location region includes areas beyond the national frontier.

Finally, the influence of the general levelling-out of income on the geographical mobility of production units should be mentioned. Such levelling diminishes the chances of profiting, by migration, from ample labour supply on sub-markets that could otherwise be advantageous to the establishment in question in terms of labour costs. Again the restriction holds that the relevant region should not extend beyond or be situated outside the national frontiers. If that were the case, disappearance of activities that need relatively much low-skilled labour to developing countries where such labour is abundant, could be the consequence. Such a development seems favourable because it improves the qualitative structure of the domestic labour market. However, if the development were too rapid, unemployment among skilled workers could be the result.

This discussion of the development of mobility continues with an attempt to sketch how the professional mobility of the demand for labour has evolved in the course of time. By professional mobility of demand for labour we understand the propensity of entrepreneurs to adjust the professional structure within their establishments to changed labour-market conditions.

In part, professional mobility is affected by the same factors as geographical mobility. The process of work division has given rise to progressive differentiation into sub-markets. This differentiation is often difficult to modify in view of the strengthened position of the labour factor. Changes in the professional structure of the demand for labour are apt to involve also the interests of those categories of workers to whom they were not primarily oriented. That is why changes in the professional structure of the demand for labour proceed laboriously and gradually.

What has been said so far referred mainly to changes in the professional structure against the background of a given technical production apparatus. Mechanisation and automation shift tasks from unskilled and low-skilled labour to capital equipment. Thus, the professional structure of the demand of labour is naturally

changed, the more so because capital intensification not only replaces, but also creates positions. Probably, however, capital intensification, while changing the professional structure, will at the same time, owing to the strong complementarity between capital equipment and actions and tasks to be performed, lessen the possibility of substitution between various kinds of positions. Thus, a professional structure emerges that to an increasing extent is determined by the state of the process of capital intensification in the establishment. In that way, capital intensification would make the professional structure less flexible, and only the introduction of new technical production systems could change that.

However, with reference to the evolution of the professional mobility of the demand for labour it is not of primary importance to know whether capital-intensification and the attendant change in professional structure is in fact a fluctuating or a gradual process. What is essential is the question whether capital intensification constitutes an instrument for adjusting the professional structure of the demand for labour to that of the supply of labour. Now that is doubtful. An entrepreneur is not free in his choice of capital goods to be installed. That choice is restricted to what is offered on the market for capital goods, and that in turn is a derivative of the state of technological knowledge. The quality of capital installations offered, as far as the input of complementary labour is concerned, is probably geared exclusively and simply to labour saving, and no effort whatsoever is made to design the equipment in such a way that the demand for labour it creates matches the scarcity conditions prevailing on the labour sub-markets.

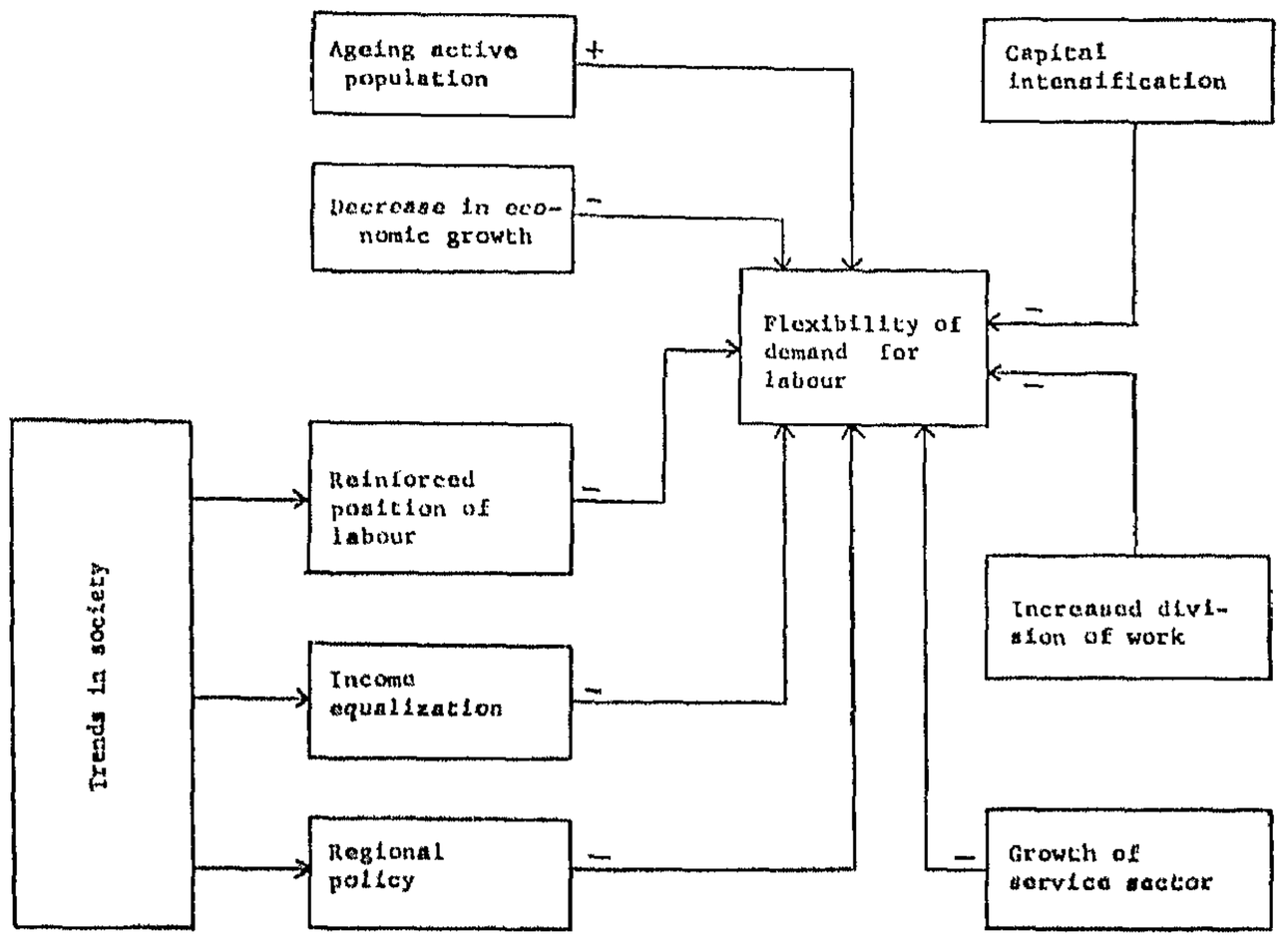
The labour savings accomplished by mechanisation and automation admittedly refer mainly to unskilled labour, the most scarcely available kind of labour. That is no sign however, of increased flexibility of the professional structure, or of a conscious response to prevailing labour scarcities. That savings have been achieved predominantly on the lowest quality of labour is mainly due to the fact that it is precisely this category of labour that for technical reasons is easiest to replace with capital. Simple repetitive actions in a production process can without difficulty be taken over by machine systems. But what is of paramount importance is that technology should be used in efforts to diminish the partial surpluses and shortages of labour, of whatever professional category, that are, and will be, caused by present and future shifts in the structure of the economy.

One final remark remains to be made about the development of

the professional mobility of the demand for labour, namely, that general equalisation of incomes lessens the impulses to adjust the professional structure to changed scarcity conditions on the labour market, unless these scarcity conditions precisely tend to lead to more equality in income, as is the case with respect to unskilled labour.

As was done for the discussion of the mobility of labour supply, all that has been said so far on the mobility of demand can be summarised in Figure 4.

FIGURE 4: *Representation of factors affecting the flexibility of the demand for labour.*



Practically all factors have a negative influence on the flexibility of demand for labour. An exception is the ageing of the active population; when positions become vacant by natural wastage, it becomes easier to make geographical and professional adjustments.

GENERAL SOCIAL DEVELOPMENTS

In the previous sections a number of specific factors have been discussed that influence developments on the labour market in the long run, and make that market less and less flexible. Increased unemployment and increased unsatisfied demand will thus occur

side by side. Apart from these factors directly related to the labour market there are others that work in the same direction, but are rooted in more general social developments.

First, there is a factor affecting the demand side. Particularly in the Netherlands, the central government, but also local and regional governments, are more and more inclined to make industrial investments subject to licenses, granted under certain conditions. These conditions are mainly concerned with three elements: the environment, the labour market, and traffic. Planned investments are tested to find out whether, given the conditions already prevailing, their effect on the environment is admissible, whether the appeal of new activities to the labour market will have a favourable effect, not leading, for example to the importation of foreign labour, and whether the traffic load resulting from the production and distribution processes and from commuting to and from the establishment will be kept within acceptable limits.

With the recent rise in unemployment there has come a tendency to alleviate the planned measures somewhat in practice, but it cannot be denied that they tend to delay the investment process on the one hand, while on the other, by the negative content of their stipulations, they limit the volume of investments. In view of the exclusively negative nature of the measures it seems remarkable that only few voices have been raised to point out that control and supervision may be fine, but that it is the Government's responsibility to make a positive contribution as well by stimulating those investments that are indeed desirable. Already in 1972 the Commission for the Promotion of Productivity and the Socio-Economic Council together pleaded in a publication[1] for a sectoral information mechanism that could indicate, given social developments, where in the economy bottlenecks are threatening (the negative side of the problem), but also where new possibilities are opening (the very important positive side). Unfortunately, the positive contribution has been sadly neglected so far, so that the negative side dominates, and not without effect on investments.

An important factor on the supply side is closely related to the technological developments in production, to marketing and administration becoming more and more complicated, and to the introduction of innovations into industries. It can hardly be denied that these developments lay a heavy psychological burden in

[1] Commissie Opvoering Produktiviteit/SER, *Structurele vernieuwing in sectoraa verband*, August 1972.

particular on older employees, which will become even heavier when owing to temporary unemployment they cannot follow these developments at all, and on being re-enlisted in the labour process find themselves confronted by a situation grown considerably more complex in the meantime. It seems probable that at least for some older employees this psychological burden will become so heavy, in other words, the discrepancy between desired and actual situation in their profession will have become so wide, that they will prefer staying unemployed to going back to work, work that they will no long consider suitable for their age.

For younger people, other, no less weighty, tendencies play a role in the present period. Especially in the last few years two issues are affecting them at the same time. One is that many establishments have cut down their staff by not engaging new personnel and letting their present staff diminish naturally. Extensive unemployment among young workers was the logical result, constituting a stimulant for many youngsters to go in for further training. Apart from that, the more or less autonomous increase in the demand for education by itself already made for a vision of labour differing from that of former times. Education is giving young people a new idea of the functioning of society, and work no longer plays its former role. The ideals to aspire to are no longer mainly economic ideals of working hard and earning a lot of money, but extend to other areas of human life. Undeniably, this trend is a long-term one, and it will be reinforced by the recent increase in unemployment, which may be expected to continue for some time to come.

Together, the developments described lead on the one hand to less demand for labour because of less inclination to invest, and on the other hand, on the supply side, to decreased ambition for work. That decreased ambition does not mean, of course, that people will not offer themselves at all on the labour market, but it does mean that people, once laid off, will be much less ready to accept a job than they used to. In fact, the definition of "suitable" work, which is becoming increasingly important, clearly shifts with the trends, more and more work being considered, by labour exchanges as well, as unsuitable; of course, in this way the number of unemployed threatens to become ever larger.

The two developments described help to bring about, or promote, two other developments. The first is the consequence of the very sharp rises in wages, and of the fact that many activities in the service sector, the largest sector at present, can hardly if at all be

mechanised or rationalised, so that their prices are apt to show steep rises. Examples are the maintenance of houses; transport; hotel, restaurant, and café activities. Undoubtedly the price increases in these sectors have brought about a strong increase in "do-it-yourself" activities, widely interpreted. That is evident in the case of the maintenance of houses. But also in transport, use of private cars, especially when several persons are carried, is frequently cheaper than use of public transport, especially allowing for the inconvenience often involved in using the latter.

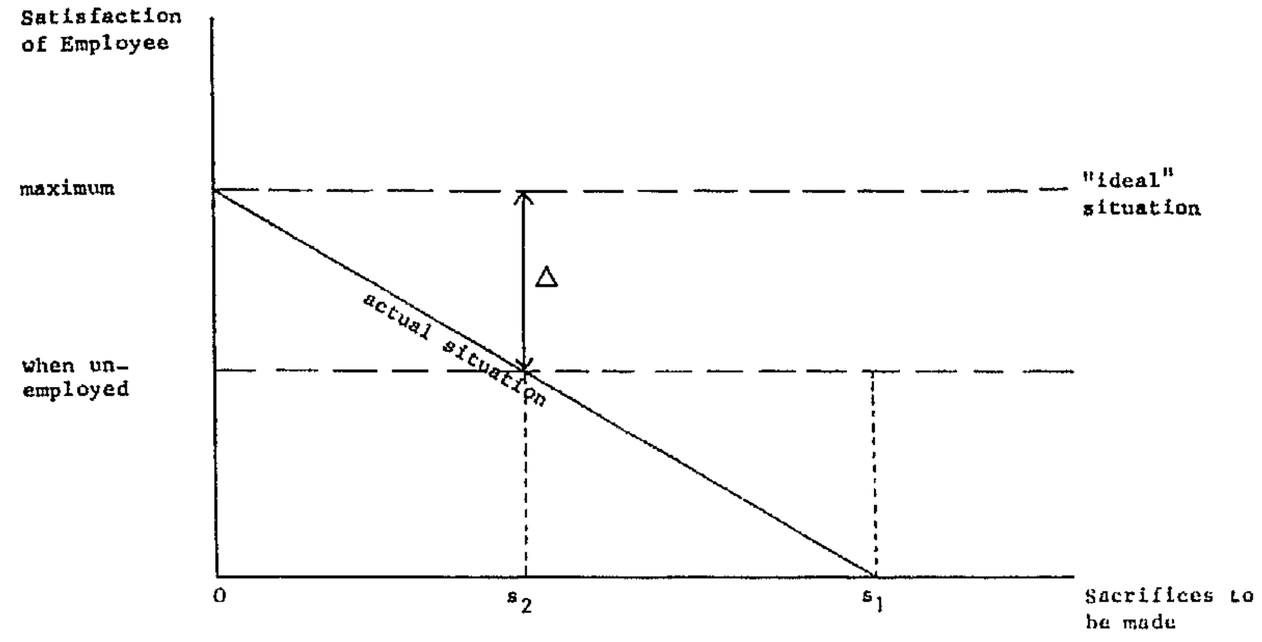
The shifts in activities mean on the one hand that active people who are now exercising "economically justified recreation" in their "free" time, actually work more hours than they used to; on the other hand they have essentially decreased the demand for services in relation to former times. If developments in the service sector are continued in the same direction, that sector will be confronted by an increasingly keen competition from the "household sector", and offer proportionately less employment.

The same factors, among others, are causing the development or a free, or black, market for labour, on which suppliers thankfully avail themselves of the often quite considerable difference between the tariffs service establishments charge and the net wage paid out to their employers. This refers to a category of workers who are in between the householders "doing-it-themselves" and service establishments. Doing things yourself has the disadvantage of taking up free time, making use of professional establishments has the disadvantage of being very costly. Engaging an "odd-job-man" has the advantage of lower cost and more free time. A large portion of these activities are hidden from observation, but evidently they tend to lower the officially registered production volume in the sectors involved and the number of officially registered workers.

Almost all the developments outlined so far point in the same direction, towards immobility and a trend of increasing unemployment. It is important to realise that, if the increasing unemployment trend is in part the result of factors on the demand side, there are also highly important influences on the supply side. It is true that the latter can increase immobility but that is no reason to reject them. As an illustration Figure 5 is essentially similar to Figure 4.

In Figure 5 the vertical axis measures the satisfaction that an employee gains from an existing situation, depending upon the sacrifice to be made (measured along the horizontal axis). If there were no unemployment benefit, the discrepancy between the ideal situation (the upper horizontal line) and the actual situation would

FIGURE 5: *Influence of an increase in employment benefit.*



become serious enough for the worker to prefer unemployment when the sacrifice to be made becomes equal to or larger than s_1. With unemployment benefit, the point of preferred unemployment moves to s_2. It appears from the diagram that for sacrifices between s_2 and s_1 the discrepancy between ideal and actual situation when there is no unemployment benefit is greater than the maximum discrepancy in the case where unemployment benefit *is* granted. Unemployment benefit, then, tends to decrease the average discrepancy. As far as the payment of such benefits can be supported by the country's economy (that is, by those working), it may be concluded that unemployment benefit, even though it makes for more unemployment, helps to increase social welfare.

This example has wide implications, already referred to in previous paragraphs, and explains why it would be wrong to identify greater unemployment always with lower welfare. Precisely for that reason the approach through the discrepancies between ideal and actual situations for working and non-working people has been chosen.

CONCLUSION

Probably the somewhat vague conclusion at the end of the previous section is the most important one to be drawn from the arguments presented. Present social processes lead to new preferences, induced also by the social amenities provided. It is highly

probable that these amenities will cause so-called "rational" unemployment to increase; the limit will be reached only when society as a whole is no longer able or prepared to bear the consequences of the present social evolution. That moment may come earlier than expected on the face of it. One would be mistaken to conclude that many who are unemployed are so by preference, and that those who are working, do so voluntarily. The observed process is developing partly on a macro level and its consequences are that many people are out of employment against their will, while at the same time many are working without satisfaction. People are laid off largely unselectively, for which the lack of flexibility in many areas is, among other things, to blame. The situation is an unhappy one, not only because of the costs involved in the system, but also because of the frustrations it invokes in unemployed as well as employed. It looks as if the limits to further growth of the number of "rationally" unemployed are coming into view.