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WORK SHARING: WHY? HOW? HOW NOT ...

Jacques H. Drèze*



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1. INTRODUCTION AND SUMMARY

1.1 As soon as it became clear to Europeans that the recession born in the mid-seventies was going to be severe and protracted, some of them became concerned with the prospects for *redistributing work over péople so as to reduce the extent of involuntary unemployment*, i.e. with the prospects for *work sharing*. That was not an innovation. A similar concern had arisen in the thirties, leading to the dramatic unsuccessful attempt by the Front Populaire to impose abruptly a 40 hours week in France. (See for instance, Economie Européenne (1980) and Fontaine (1984) for a summary account of that earlier development. Average weekly hours in French manufacturing did not come down to the 40 hours target until... 1982!)

In recent years, a number of policy measures designed to promote work sharing have been implemented in European countries, and several reports have attempted to asses their impact; see, for instance Van Den Bergh and Wittelsbürger (1981), Hart (1984) or Commissariat Général du Plan (1985).

The overall impression conveyed by these reports is one of limited effectiveness of work-sharing measures in reducing unemployment - at least if one goes by hard evidence. (See also Part II below.) Also, some authoritative voices asserted that these measures are misdirected and bound to be self-defeating; see Layard et al. (1984).

Yet, with unemployment rates among the young reaching 25 % or more in several European countries and no major improvement in sight (Cfr European Economy, November 1984, Table 8, p. 16), it is understandable that motivations to bring about some degree of work sharing should persist.

The present paper is not meant to replicate the existing collective reports, but rather to provide an appraisal of the recent European experience, and of the prospects for work sharing, in the light of the modern microeconomic analysis of labour contracts. This calls for some theoretical considerations (Part I) before turning to the evidence (Part II), and I must beg readers to endure the detour. A brief summary of the arguments may serve the dual purpose of providing the patient readers with markers, and the less patient or less interested readers with an excuse for jumping to the conclusions, or discarding the paper altogether¹.

1.2 To begin with (Section 2), I shall argue that most people attach a positive value to having a "regular job" (as opposed to a "casual job", or no job at all). Within the context of regular jobs, their supply of hours and effort obeys the standard neoclassical assumptions. There are substantial variations across

individuals, and for given individuals over time, in the value of a job and in the supply of hours. From the viewpoint of business firms, "regular jobs" are the typically preferred form of employment. But the provision of such jobs entails fixed hiring costs (of screening, training and long-term commitments). Also, the provision of these jobs requires the existence of working posts, and the expectation of continued need for the additional employee, hence of continued output demand. Accordingly, the provision (supply) of regular jobs is inelastic to their short-run cost.

Next (Section 3), I shall argue that short-run disequilibria on the markets for regular jobs can occur, can sometimes become sizeable and are subject to self-aggravating tendencies. In such situations (well illustrated by present circumstances), the resorption of disequilibrium can be very slow. It would be both undesirable and unrealistic to rely on wage flexibility alone to clear labour markets in the short run.

The theory of "implicit labour contracts" explains why the wages of employees on regular jobs remain downward rigid in periods of slack demand for labour. Quantity adjustments take place, preferably in the form of partial unemployment or temporary layoffs, which combine labour hoarding by firms with some degree of work sharing among the employees under contract. New entrants to the labour market are not part to these arrangements, however. There is no market mechanism whereby work could be redistributed efficiently between workers under contract and newcomers. In addition, the effectiveness of preexisting contracts requires a degree of rigidity for the wages specified in new contracts as well. And the fixed costs of new hirings, coupled with rigidities in the organisation of work, stand in the way of work sharing among newcomers in the form of part-time employment. There results an inefficient allocation of regular jobs, from which many newcomers (in particular the young) are left out. Special measures are needed to correct that inefficiency (Section 4).

The scope for special measures is based on three considerations (Section 5). First, there are externalities, the most obvious of them being the unemployment compensation, which is a cost to society but not to individual agents. Second, there are complex legal provisions, which may or may not facilitate work sharing. Third, there are many "public good" aspects to the organisation of working time, providing scope for leadership through public policy.

After a brief interlude (Section 6), which offers a normative alternative to Part I, I turn at last to the record (Part II). Selected fragments of evidence from various sources are organised under three headings:

(i) *Trading jobs*, i.e. replacing a worker under contract by a newcomer (Section 7): there is scope for such replacements to the extent that the value of a job varies widely over individuals; the most obvious measure calls for early retirement (voluntary) with mandatory replacement; measures of that kind have been introduced in several countries, pulling large numbers of workers out of the labour force; although hard figures on new hirings are scanty, those which exist reveal a large measure of success when but only when replacement is mandatory; this is the easiest form of work sharing; but more detailed work remains needed to quantify prospects, both numberwise and costwise.

(ii) *Sharing jobs*; this can take two forms (Section 8):

(a) a worker under contract is replaced by a newcomer on a part-time basis (typically half-time); measures to that effect have been introduced in some countries, with negligible effects; still, surveys suggest substantial potential interest in progressive retirement schemes;

(b) newcomers are hired on a part-time basis, so that a single working post is filled by more than one person; this is in principle easier, since no worker under contract is involved; measures facilitating part-time employment have been taken in some countries, and hirings of public servants on an 80 % basis have been introduced in the Benelux countries; there is no indication of growth in part-time work by men; the growth for women is concentrated in those countries which are lagging behind in this respect, and reflects a trend towards greater accommodation of worker preferences rather than a cyclical pattern. One specific difficulty with job sharing seems to arise from rigidities in the organisation of working schedules, which stand in the way of part-time early retirement and of part-time contracts on a 75 % or 80 % basis. This is the area where innovative measures, difficult as they may be, seem to offer the greatest challenge. Additional data on part-time work in Europe are collected in the Appendix.

(iii) *Trading hours for jobs*, i.e. reducing weekly (or annual) working time for workers under contract in order to create new jobs (Section 9): this is the most controversial measure; it is also a difficult one, because large numbers of

workers under contract are involved, and because the measure interferes with the organisation of work; more significantly, firms engaged in labour hoarding will not hire additional employees in response to reductions in hours, whereas expanding firms will resist such reductions; the short-run elasticity of employment with respect to hours worked is probably very small, and we know very little about the long-run elasticity. There is no clear evidence of promising prospects along this line, outside of isolated situations (like continuous operation with multiple shifts).

In conclusion, both short-run and long-run policy prospects are evaluated (Section 10).

1.3 The summary just given indicates that the paper covers a broad range of issues. Length considerations will force me to deal with some of these issues very briefly. In particular, aspects well covered in accessible documents (like implicit contracts theory) will be treated summarily². Also, I shall refrain from any peripheral developments. This is not a paper on employment policies in general, but specifically on work sharing. Thus, the issues of the trade-off between work sharing and other measures, or between employment and other objectives (like price stability), are not taken up. This is not belittle their significance. Promoting overall employment through an adequate combination of supply-side and demand management measures remains the first priority, in the light of the present essay.

PART I: THEORY (WHY?)

2. REGULAR JOBS

2.1 The distinction between the total number of hours worked and the number of persons employed is now part of any serious discussion of labour use and employment (OECD 1983, 1985). It has also found its way progressively into econometric practice (see Fair, 1969, for an early account). The relevance of the distinction is brought out by the figures on hours worked per person, which reveal a steady decline, both in the long run and in the recent past (Tables 1 and 2).

The same distinction is relevant at the microeconomic level, both on the side of labour supply by households and on the side of labour demand by firms; at that level, it is also usefully coupled with the distinction between "regular jobs" and "casual jobs", as already developed in some detail by Hicks in *The Theory of Wages* (1932, 63-74).

By a "regular job" is meant an employment relationship that is expected by both parties to have some stability and to extend over such duration as circumstances will permit, with neither party forcing termination whimsically. The stability may be guaranteed through an explicit contract; due to the difficulty of covering enough relevant contingencies in formal terms, the typical contract will be largely implicit and rely on accepted norms of behaviour, to which both parties are expected to conform.

"Regular jobs" are opposed to "casual jobs", which carry no expectation of stability. The latter are fully defined by the performance of a specific task over a specific time span (typically, a short span), against a given wage. Neither party commits itself, not even implicitly, to continue the relationship.

There are many cogent reasons why regular jobs are a superior form of employment relationship, from the viewpoint of firms and workers alike. Relevant considerations include the following:

(i) Most jobs are performed better with the benefit of experience, including some experience specific to the workplace itself; when the job involves team work, the experience is an attribute of the team, and needs to be rebuilt whenever a member of the team is replaced.

| Year | Men | Women | All workers |
|------|-----|-------|-------------|
| 1891 | 153 | 51 | 102 |
| 1911 | 146 | 46 | 96 |
| 1921 | 130 | 39 | 84 |
| 1931 | 126 | 41 | 83 |
| 1951 | 118 | 40 | 79 |
| 1961 | 113 | 40 | 76 |
| 1971 | 100 | 40 | 69 |
| 1981 | 88 | 40 | 64 |

TABLE 1. Life hours of work in the United Kingdom (thousands)

Source : P.J. Armstrong, *Technical Change and Reductions in Life Hours of Work*, London, The Technical Change Centre, 1984.

| | 1890 | 1913 | 1929 | 1950 | 1970 | 1979 |
|----------------|-------|-------|-------|-------|-------|-------|
| Austria | 2 760 | 2 580 | 2 281 | 1 976 | 1 848 | 1 660 |
| Belgium | 2 789 | 2 605 | 2 272 | 2 283 | 1 986 | 1 747 |
| Canada | 2 789 | 2 605 | 2 399 | 1 967 | 1 805 | 1 730 |
| France | 2 770 | 2 588 | 2 297 | 1 989 | 1 888 | 1 727 |
| Germany | 2 765 | 2 584 | 2 284 | 2 316 | 1 907 | 1 719 |
| Italy | 2 714 | 2 536 | 2 228 | 1 997 | 1 768 | - |
| Japan | 2 770 | 2 588 | 2 364 | 2 272 | 2 252 | 2 129 |
| Sweden | 2 770 | 2 588 | 2 283 | 1 951 | 1 660 | 1 451 |
| United Kingdom | 2 807 | 2 624 | 2 286 | 1 958 | 1 735 | 1 617 |
| United States | 2 789 | 2 605 | 2 342 | 1 867 | 1 707 | 1 607 |
| Median | 2 770 | 2 588 | 2 285 | 1 982 | 1 825 | 1 690 |

TABLE 2. Annual hours worked per person, 1890-1979

Source : A Maddison, *Phases of Capitalist Development*, Oxford University Press, 1982.

(ii) Most firms are complex organisations, where individual workers stand in relationship with many other members of the firm (supervisors, personnel department, maintenance or inventory services,...); these relationships are facilitated by repeated contact.

(iii) The employer-employee relationship is in itself a complex relationship, involving a measure of trust and mutual understanding which can only be developed gradually.

(iv) A longer-run employment contract provides opportunities not present in short-lived contracts; thus, rewarding realised performance *ex post*, averaging between good and bad years, or between periods of pressure and slack, is possible with regular jobs, but not with casual jobs.

2.2 From the viewpoint of workers, the workplace provides one among many examples of areas of life where regular relationships, developed over time on a continuing basis, are essential to the pursuit of human goals. The foremost examples are of course the family and friendship. Medical care, education, community relationships, trades, services, leisure activities, and so on, provide additional examples. An important indirect benefit from a regular job lies in the prospects which it affords for founding a family, buying a house, establishing consumption patterns, etc... . In modern economies, fringe benefits and social security benefits are more extensive for holders of regular jobs, thereby increasing their attractiveness. These benefits form a growing part of overall compensation.

It is thus safe to assume that *most individuals attach a positive value to having a regular job*; within the context of such jobs, they supply hours (and effort) in accordance with the traditional assumption of a diminishing marginal rate of substitution between leisure and income. This eminently sensible view is not incorporated in standard textbook treatments of labour supply, because it introduces a non-convexity in preferences and a discontinuity in the supply of hours. It is however incorporated indirectly in the models of "learning by doing" and "embodied human capital", which aim at capturing the advantages of regular jobs mentioned under (i) and (ii) above; or in the models of employment over time under uncertainty, where a simple assumption of risk aversion brings in the aspects mentioned under (iii) and (iv) above³ .

For a proper appraisal of work-sharing measures, the significance of recognising the positive value to workers of regular jobs is twofold. First comes the immediate implication that the distribution of an aggregate number of hours over individual jobs matters, to an extent imperfectly captured by the supply of hours. A distribution over more jobs carries the advantage of shorter hours and more leisure for all concerned; *in addition*, it carries the advantage of endowing more individuals with positively valued regular jobs⁴ .

Second, it is important to recognise that the value attached to a regular job varies considerably, both across individuals, and for given individuals over time. That different individuals may value differently the stability of employment is an immediate corollary of the diversity of tastes. There is no need to elaborate, but one specific point should be mentioned. The idiosyncracies of attitudes towards labour concern also the supply of hours. At given wage rates, different individuals would prefer different working times. Yet, it is a commonplace observation that most regular jobs specify standard working times, imposed on whole sets of employees, with little room for individual variations. Also, these standard working times vary little from firm to firm. There are understandable reasons for that uniformity (discussing them would be peripheral to my purpose). Hopefully, standard working times may reflect the preferences of a "median worker", being too long for half the labour force and too short for the other half. When faced with the choice of either working the standard time, or not at all, each worker takes an all-or-none decision. The net value of the job will, other things equal, be the higher, the closer standard working time comes to an individual's preferences. In particular, those who would prefer definitely shorter hours will benefit less from holding the job. It would seem plausible that older workers fall into that category and hence place a lower net value on regular jobs.

There are two additional reasons why the value to any individual of having a regular job is bound to decline as the age of retirement draws near. On the one hand, the period over which a stable relationship is anticipated becomes shorter, hence less significant. On the other hand, the link with other durable patterns of behaviour (family, house,...) becomes less important, as these are well established already.

The significance of individual variations in the value of regular jobs is of course that they offer prospects for gains through redistribution - a point that is central to some work-sharing measures, and is taken up in Section 7 below.

2.3 The considerations in Section 2.1 pointing to the superiority of regular employment relationships explain why this is typically the form of employment preferred by business firms. They also suggest two important characteristics of regular jobs.

First, *the provision of a regular job requires an initial investment on the part of the firm* - the "toll" discussed at length by Okun (1981, chapters 2, 3) and turning labour into a "semi-fixed factor" (Oi, 1962)⁵. Obviously, the benefits of experience acquired on the job, of integration in a work team and in the firm's organisation, of mutual trust or of averaging rewards over time and across states, will accrue only progressively after a period of initiation. There will often be a period of training, during which a worker's productivity may be insufficient to cover his or her wage. Furthermore, because workers are heterogeneous, firms will attempt to identify the more promising candidates through screening. Expenses associated with training and screening are in the nature of a fixed cost attached to each new hiring. Also, to the extent that the firm is offering some degree of income and employment stability⁶, it is undertaking a commitment, which may under adverse circumstances prove costly. The present value of whatever costs or risk premium may be associated with that commitment is another component of the fixed cost of a new hiring.

An important implication of this initial investment, or toll, is the typical preference of firms for hiring employees on a full-time rather than a part-time basis. By "typical", I mean here that special advantages linked to part-time work must be present in order for that form of employment to be offered. (The foremost example comes from peak loads within the week, as in retailing, where part-time work is indeed widespread.) Otherwise, the initial investment is basically the same whether a person works full time or part time. (This is obvious for screening and training costs. It is also true for on-the-job learning. If it takes 500 hours to learn a job well, two half-time workers will need 1000 hours together; and so on.) Consequently, full-time work is altogether cheaper, and part-time work is "typically" confined to casual jobs⁷, pending special inducements.

Second, *"regular jobs" are not created at will, they must correspond to some real employment prospect in the firm*. At the start, this requires the availability of a working post, the existence of demand for the output, and relative prices at which the additional job is profitable. In addition, the firm must anticipate that the additional employee will remain wanted with sufficient probability for a sufficient time. Adverse anticipations or considerable uncertainty about technological developments, demand or relative prices would destroy the prospect of potential employment. The disconcerting fact is that so many conditions must be fulfilled *simultaneously* in order for a regular job to be forthcoming; whereas failure of any *one* condition is enough to annihilate the prospect.

An important implication of the combination of real factors needed for the existence of a regular job is that the supply of such jobs is bound to be highly inelastic to their short-run cost. Specifically, temporary wage cuts or employment subsidies will not be very effective in increasing the supply of regular jobs. First, the other elements must be there (working posts and demand for output). Second the relevant cost consideration is the long-run cost over the prospective period of employment, of which the short-run cost is only a part. Thus, temporary employment subsidies will at best move forward in time hirings that were contemplated anyhow⁸, and stimulate casual employment. Desirable as they may be, these effects remain limited in scope.

These remarks also help to put the issue of severance pay in sharper perspective. It is often stressed that rights to severance pay deter firms from hiring additional workers who could profitably be employed in the short run. Clearly, if the prospect for continued employment is there, severance pay (though relevant) is not a major issue. But if the prospect for continued employment is lacking, then no regular job is at hand, irrespective of the severance pay issue. One should thus not expect a reduction of severance pay to have a major influence on the supply of regular jobs. At the same time, severance pay for casual jobs, where it exists, will deter that form of employment. And there is scope for illusion about the extent to which a job is casual or regular... . It is thus understandable that proposals to reduce severance rights be regarded with suspicion by unions. And it might be more judicious to promote instead labour contracts of fixed duration⁹.

3. SHORT-RUN FLUCTUATIONS

3.1 The short-run equilibrium between supply and demand for regular jobs is subject to numerous hazards - as we know only too well from recent experience. There are several independent factors affecting either the supply or the demand for regular jobs. When a number of them operate simultaneously to reduce the supply and inflate the demand, a serious imbalance may result. A long time may be needed to correct that imbalance, during which time self-perpetuating forces are apt to be at work. There are clear signs of such an unhappy combination of circumstances in the present situation.

To begin with the supply of jobs (demand for labour), four main factors should be listed as exerting macroeconomic influences. (These factors may of course affect specific labour markets differently; the point of interest here is that, when these factors affect many specific labour markets of a given country, or set of countries, in the same direction, then macroeconomic implications become noticeable.)

(i) The demand for output may be slack, due to an excess of savings over investment, to a fall in the demand for exports, to a contractionary fiscal policy, to a combination of these, etc... .

(ii) Labour-saving technological progress may reduce the demand for labour at given levels of output.

(iii) Relative factor prices may induce substitution of capital for labour, or substitution of production elsewhere for production in the home country.

(iv) The capital stock physically available, or susceptible of profitable use, may become insufficient to offer an adequate number of jobs.

Looking at a given country at a given time, the first three factors may set in exogenously. (This is obvious for technological progress. The slack of final demand may originate abroad. And the shift in relative factor prices may reflect, for instance, the progress of industrialisation in developing countries.) These factors may also originate in the country itself, as when domestic labour costs undergo an autonomous movement, which may in turn direct research and development towards labour-saving technological progress. In either case, the response of fiscal policy is basically an endogenous factor - but that does not guarantee the proper response! And a self-perpetuating force sets in, when public deficits originating in the reduced levels of employment and activity are deemed unbearable and fought through reduced public expenditure.

Most significantly, as the demand for domestic output slackens, investment is discouraged, plants are scrapped, and the capital stock is brought down to the level warranted by current output. While the low level of investment further reduces aggregate demand, the fourth factor comes into play: there are no longer enough working posts to generate adequate employment; reflating the supply of jobs now requires investment in new capacity; the growth of employment is bound to be slow, even in the face of a demand upheaval; and demand management is discouraged by the fear that insufficient capacities lead to inflationary pressures.

Turning to the demand for jobs (the supply of labour), the main factors operating in the short run are the demographic and migratory movements, and the changes in participation rates. In some European countries, female participation rates have gone up steadily over the past decades, resulting in significant increases in labour supply through the recession.

Although there is frequent reference in the literature to the so-called "discouraged worker effect", it may also be the case that unemployment discourages some workers (especially married women) from *quitting* jobs which they would otherwise have given up temporarily; at the same time, unemployment may induce others to register as job seekers, even though they might otherwise have postponed entry in the labour force. In this way, unemployment becomes subject to self-perpetuation.

3.2 The two characteristics of regular jobs discussed under 2.3 above take up additional significance, when the prospect of sizeable short-run fluctuations is recognised.

First, because regular jobs entail an initial investment, prospective fluctuations shift the terms of trade against them and in favour of casual jobs. In particular, at times of high *uncertainty* about demand, technology and real wages in the future, one may expect a temporary increase in the reliance on casual employment. Unfortunate as this development may be, given the well-founded preference of employees for regular jobs, it is to some extent unavoidable, and still compatible with efficiency. In particular, postponing the investment into a new hiring until it can be directed more effectively may be desirable. This would call for accepting a development of casual jobs during a recession, and waiting for the signs of recovery to incur the tolls of job creation in those activities which do benefit from the recovery.

There is some casual evidence that the private sector is relying more intensively on casual employment (including sub-contracting and contracting ad interim) in times of recession and uncertainty, like nowadays. In the public sector, special employment programs make sense in such times, especially those providing casual jobs for the young. The attractiveness of these programs comes from the relative ease and speed with which they can be set up, from their low net costs, and hopefully from the social value of the associated output.

Second, because the supply of regular jobs is inelastic to wage costs in the short run, relying on wage flexibility to clear the markets for regular jobs is not a realistic prospect. Indeed, market clearing wages could drop to very low levels in response to a conjunction of adverse shocks. Most likely, wages could drop to a level where the "market clears" ... because sizeable unemployment becomes voluntary! That is, market clearing wages could drop to a level sufficiently close to the opportunity cost of workers (including unemployment benefits - about which more below) that many of them become unattracted by employment (although still registered as involuntarily unemployed, to collect the benefits).

There are two compelling reasons why *that kind* of flexibility is undesirable. The first, of a microeconomic nature, is that it would generate an extent of income uncertainty placing an excessive burden on workers holding regular jobs. That argument is taken up in Section 4, and extended to a discussion of wage discrimination between workers under contract and new recruits. The second, of a macroeconomic nature is that a major drop in labour incomes would depress aggregate demand further, leading to an "equilibrium" with very low levels of output and employment. The fact that the resulting unemployment be labeled "voluntary" provides little solace... . Given our imprecise estimates of the wage elasticity of labour demand and of the income multiplier, not to mention our near ignorance of the implications of wage moderation for government budgets, it is safer to look at incomes policy as a long-run instrument and not to rely on it as a short-run stabiliser of employment.

4. LABOUR CONTRACTS AND MARKET FAILURES

4.1 How then does one reconcile the idea that most people want to have a regular job and stable income with the prospect of recurrent fluctuations in the demand for labour? This very question is taken up in recent theoretical work on labour contracts, known as "implicit (labour) contracts" theory; see Azariadis (1975), Baily (1974) and Gordon (1974) for the seminal contributions; Drèze (1979 b) for a non-technical presentation of the main ideas; and the more recent accounts in the *Quarterly Journal of Economics*, Supplement 1983, or in the surveys by Azariadis (1979), Ito (1982) and Rosen (1985).

The merit of that theory consists in looking at the shocks affecting labour markets *ex ante*, as of the time when an employment relationship is initiated *with some prospect for duration*. A current limitation of the theory is that it looks only at employment patterns within preexisting contracts, and does not address itself to disequilibrium on the market for contracts. I shall consider the two issues successively, then sum up the argument in Section 4.5.

The main premisses of implicit contracts theory are:

(i) in the face of fluctuations in output and labour demand, lasting employment relationships (regular jobs) offer scope for pursuing employment and compensation policies which are Pareto optimal *ex ante* from the viewpoint of the firm and its employees;

(ii) workers, being unable to diversify their labour supply, are more risk-averse than firms, whose shareholders can hold diversified portfolios;

(iii) incentives, moral hazard, information asymmetries, the illegality of involuntary servitude, a.s.o., place limitations on implementable contracts.

This is not the place to review or summarise a sizeable and growing literature, to which accessible introductions are available elsewhere (see references above). The main point of relevance to us here is that *efficient labour contracts will embody an element of risk-sharing*, whereby labour incomes are to a sizeable extent protected from the vagaries of supply and demand shocks. If wages were allowed to jump up and down in response to these shocks, the resulting income uncertainty would be costly to bear for workers, more so than it would benefit the less risk-averse firms. Hence the prospect for Pareto superior arrangements, where the *labour contracts include a form of income insurance through downward wage rigidity*. The insurance premium should be paid partly through lower wages during the early period of employment (explaining to some extent the practice of seniority bonuses), partly through reduced upward wage flexibility (to the extent compatible with incentives). A Pareto-optimal arrangement would combine an efficient degree of risk-sharing (whereby in particular labour incomes become immune from firm-specific risks and bear a less-than-proportional share of economy-wide risks¹⁰) with privately efficient levels of employment (marginal value product of labour equal to its opportunity cost for workers at all times).

The combination of downwards wage rigidity and efficient levels of employment implies that wages actually paid out do not correspond to the marginal value product of labour at all times, but only do so *in expectation*. In particular, during a recession, wages will in many firms exceed the marginal value product of labour. These firms will be said to practise "labour hoarding". It is an immediate implication of the theory that such firms will not hire new workers, *even at wages lower than those which they currently pay*; new hirings will start only at wages lower than the marginal value product of labour, with all employees under contract working full hours. For these firms (which could well be a majority during a deep recession), the elasticity of employment with respect to wage decreases is zero ¹¹

As for the workers under contract, whatever degree of unemployment would have been voluntary at market clearing wages remains warranted (Pareto efficient) at the rigid wages; the marginal value product of labour should not fall below the reservation wage of the workers - but should fall that much! The difference is that, at the downward rigid wage, unemployment *appears to be involuntary* - and is definitely perceived as such by the individual worker; or else, laid off workers should enjoy full income insurance, which is seldom observed in practice (probably because firms cannot afford to supply that much insurance). Efficient arrangements again call for work sharing among employees under contract, who should preferably be laid-off on a part-time basis at times of slack employment, to the extent compatible with incentives and the organisation of work. In practice, that approach seems applicable only to blue collar workers; temporary layoffs, whether on a part-time or full-time basis, are practically unknown among white collars ¹². And part-time layoffs for blue collars are often discouraged by the rules governing unemployment compensation, which is not always forthcoming on a flexible, part-time basis.

4.2 There is very little hard evidence on the extent to which the recommendations of implicit contract theory are implemented in practice ¹³, beyond the easy observation of widespread downward rigidity of wages, either real (as in most European countries) or nominal (as in the US). The extent to which firms use labour at marginal products below nominal wages in bad times (and conversely in good times) is not easy to ascertain, beyond the general belief (corroborated by econometric studies) that firms practise "labour hoarding" during recessions. Neither do we know precisely how reductions of labour inputs are distributed over workers under contract - a subject on which some evidence should now be available in Europe ¹⁴. Collecting and analysing that evidence would seem worthwhile, if only for the light it could throw on the related issue of including the unemployed in work-sharing schemes.

A partial indication is available at the European level for employees of the steel industry. Some recent figures are reproduced in Table 3. It is unfortunate that no details are given on the category "other leavers", whose content seems to differ as between countries (presumably, it includes temporary layoffs in France and Germany, but not in Italy and the UK). Still, there are important national differences in separation patterns, especially in the form of dismissals and resignations. And it is interesting to note the significance of early retirements.

As for temporary layoffs and part-time unemployment, there is evidence that they move pro-cyclically. Some recent figures are reproduced in Table 4. They do suggest that the phenomenon is both significant and limited in scope.

4.3 The literature in print about labour contracts does not explain why we observe prolonged spells of mass unemployment, with large numbers of workers without regular jobs (without contracts). The theory in print deals with properties of efficient contracts in economies where the markets for contracts clear, it does not deal with disequilibrium on these markets. To understand the issue of work-sharing, we must go beyond the findings of implicit contract theory and consider situations of disequilibrium on the market for regular jobs. Of course, the existing theory has useful implications for these situations as well, some of which are spelled out in Section 4.4 below. But a major extension is needed, which calls for a model with successive generations^{15, 36}.

Consider again *ex ante* the prospect of sizeable fluctuations in the supply of regular jobs (in the marginal value product of regular labour), taking into account the fact that a new generation of workers will enter the labour market in the future, under conditions that may be either "good" or "bad". If conditions are "good", there will be full employment of both initially employed workers and newcomers. If conditions are "bad", there will not be enough regular jobs for everybody at full hours. How could the prospect of excess demand for regular jobs under "bad" conditions be eliminated?

The answer which is implicit in the implicit contracts literature is the following. Assume that the members of the new generation are present, or represented, when the initial labour contracts are drawn. It will then be possible for firms to hire the newcomers forward, specifying the compensation and terms of employment simultaneously for the "good" and "bad" conditions. The newcomers would thus be under contract from the start, on par with earlier generations; the only difference being that actual employment of the newcomers starts later. In so far as clearing the market for contracts is concerned, all workers (the old and the new) would be treated symmetrically, and a global equilibrium could be characterised. Under that

| | Europe 9 | | Germany | | France | | Italy | | United Kingdom | |
|-----------------------------------|----------|---------|---------|-----|---------|-----|---------|-----|----------------|-----|
| | 1981 | 1982 | 1981-82 | % | 1981-82 | % | 1981-82 | % | 1981-82 | % |
| Number of employees (end of year) | 548 767 | 513 565 | 175 946 | | 95 200 | | 91 465 | | 74 475 | |
| Dismissals and Redundancies | 19 591 | 11 215 | 6 383 | 11 | 644 | 2 | 673 | 3 | 21 555 | 42 |
| Voluntary resignations | 14 372 | 9 477 | 8 868 | 15 | 2 194 | 8 | 7 403 | 39 | 2 906 | 6 |
| Retirements | 23 181 | 19 495 | 12 091 | 21 | 6 713 | 26 | 3 925 | 21 | 14 203 | 28 |
| Early retirements | 19 760 | 16 897 | 10 212 | 18 | 6 246 | 24 | 2 400 | 13 | 13 455 | 26 |
| Other leavers | 20 104 | 20 178 | 20 185 | 35 | 10 411 | 40 | 4 564 | 24 | -1 045 | -2 |
| Total leavers | 97 008 | 77 262 | 57 739 | 100 | 26 208 | 100 | 18 965 | 100 | 51 074 | 100 |
| Total entrants | 47 484 | 41 441 | 36 279 | | 16 625 | | 10 932 | | 13 458 | |
| Entrants minus other leavers | 27 380 | 21 263 | 16 094 | | 6 214 | | 6 368 | | 24 503 | |

TABLE 3. *Entrants and leavers in steel industry, Eur 9*

Source : Eurostat, *Emploi et chômage*, Bulletin Statistique, 4, 1983.

| | West Germany SESPROS | France SESPROS | France INSEE | Belgium IRES |
|------|-------------------------|-------------------|-----------------|-----------------|
| 1973 | | | 119 | 33.3 |
| 1974 | | | 133.4 | 41.9 |
| 1975 | 773 | | 427.2 | 82.5 |
| 1976 | 277 | 180 | 309 | 58.5 |
| 1977 | 231 | 319 | 136.9* | 69.1 |
| 1978 | 191 | 230 | 162.7 | 69.8 |
| 1979 | 88 | 139 | 90.3 | 69.6 |
| | | | 57.4* | |
| 1980 | 137 | 185 | 101.5* | 80.3 |
| 1981 | 347 | 398 | 191.3 | 93.6 |
| | | | 116.2* | |
| 1982 | 606 | 220 | 75.3 | 82.5 |
| 1983 | 675 | 233 | 109.1 | 81.7 |

TABLE 4. Temporary layoffs (Thousands of employees)

Sources : SESPROS. Eurostat, *Protection Sociale*, 2, 1984.

These numbers are annual averages and include temporary layoffs due to weather conditions.

INSEE. Enquête Emploi (Publication annuelle).

These numbers apply to a single week in march or april, and do not include temporary layoffs due to weather conditions.

* denotes a single week in october.

IRES. A. Sonnet et P. Defeyt, "Le marché du travail en Belgique", Bulletin n° 94, 1984.

global equilibrium, everybody would work full hours under "good" conditions, and *everybody would take part in some form of work sharing under "bad" conditions* - hopefully, to such an extent that the marginal value product of labour be equal to the opportunity cost of *hours*. In such a world, no excess demand for regular jobs would occur in bad states; instead, a proper degree of labour hoarding and work sharing would be built into the private contracts, leaving no scope for public intervention. In particular, old and young would participate symmetrically in the labour-hoarding and work-sharing arrangements ¹⁶ .

Of course, the *assumption* that potential future workers take part in a market clearing process years ahead of time is a preposterous idea, to say the least. Yet, that is the very stretch of imagination required to rescue the "magic of the market" in our context - which is loaded with "market failures" ¹⁷ .

4.4 An intriguing question, not explicitly answered (to the best of my knowledge) by the labour contract theory in print, is that of wage discrimination between employees under contract and new recruits. I have alluded in Section 3.2 to two reasons, one microeconomic (spelled out in Section 4.1) and one macroeconomic, why it may not be desirable to let *wages of workers under contract* fall to market clearing levels during recessions. But these reasons do not by themselves preclude a form of wage discrimination, whereby new contracts would stipulate wages different from those of extant contracts. Specifically, new recruits could be paid wages that clear the labour market for new contracts, while previously employed workers would keep their earlier wages. Evidence that such is not the case comes, on the one hand from the observation of mass unemployment; on the other hand from casual empiricism to the effect that wage discrimination *by hiring dates* is not a widespread phenomenon.

Of course, some degree of discrimination by dates of hiring is consistent with the available evidence. And it is known that the quality of new recruits at given job characteristics improves during recessions and deteriorates during booms - see Okun (1981, pp. 67-68) and references given there (pp. 79-80). But there is no doubt that downward wage rigidity applies to new contracts as well, with limited wage discrimination vis-à-vis previously employed workers.

It could well be that such discrimination is regarded as impractical by firms and as undesirable by firms and workers alike. Wage settlements, including differentials by occupation and seniority, are complex enough already. Adding an extra dimension to the existing differentials would increase that complexity, to an extent possibly regarded as impractical. And it certainly goes against the grain of accepted ethical norms to accentuate pay differences for equal work.

It is, however, a direct, and to my mind compelling, consequence of implicit contract theory that some degree of wage rigidity *for new contracts* should emerge. For otherwise new firms (or expanding established firms) could hire newcomers at very low wages and outbid established firms *on the product markets*, thereby reducing further their output and employment. It is thus in the joint interest of established firms and their (unionised...) employees to prevent, if they can, the wages specified in new contracts from dropping to market clearing levels (to levels at which all unemployment becomes voluntary). Furthermore, a majority of newcomers is apt to endorse that attempt, whenever the market clearing wages would be very low (say, close to the level of unemployment compensation). Indeed, all workers with a reservation wage higher than or equal to the market clearing level stand to gain from the wage rigidity, and similarly for those with a reservation wage slightly inferior to the clearing level ¹⁸ .

The absence of market mechanisms leading to wage discrimination between workers under contract and new recruits has led to a number of proposals for *marginal employment subsidies* - see, e.g. Dornbusch et al. (1983) or Steinherr (1985). As I have noted above (Section 2.3), such subsidies should be substantial and durable in order to affect significantly the long-run cost of a regular job, hence employment. In addition, the argument presented in this section suggests that existing firms, and their employees, may object to such subsidies as generating unfair competition on the product markets.

4.5 We can now summarise the implications of labour contract theory *for the workers seeking employment during a recession* (the new entrants, and those who have lost their jobs, for instance in firms closing down). These job seekers are facing two kinds of firms, those engaged in labour hoarding (which contract employment), and those (including the new firms) which hire new workers. The former, which may well be a majority during a severe recession, operate at a marginal value product of

labour inferior to wage costs and equal to the reservation wage of their employees. Routine demographic replacements, which will normally absorb all new entrants in stationary conditions, are not taking place. Newcomers are excluded both from the labour hoarding and from whatever work sharing is organised among employees under contract. And these firms will not respond to wage cuts by new hirings, until the gap between wage costs and the marginal value product of labour has been bridged. In these firms, competition between workers under contract and newcomers is shut off.

Expanding firms and new firms hire labour to the point where its marginal value product covers wage costs, but not beyond. And they practise little or no wage discrimination between workers under contract and newcomers.

We thus have three groups of workers: (i) those under contract in firms which are not hiring, where they are employed at a marginal value product below their wages; (ii) those employed in new and hiring firms, with a marginal value product equal to their wage; and (iii) the unemployed.

There are two sources of inefficiency in this situation. *First*, employment should increase in the expanding firms, to the point where the marginal value product of labour is equal to the reservation wage of the unemployed. It is not clear how this can be achieved without some form of wage-cost discrimination between workers under contract and newcomers.

Second, the distribution of jobs and hours worked between the employed and the unemployed is inefficient. Indeed, I have adduced in Section 2 some quite compelling arguments to the effect that *some* newcomers at least will place a higher value on finding a regular job than *some* workers under contract attach to keeping theirs. (In particular, young workers may be more eager to start a career than workers close to retirement are eager to bring their own to term.) Hence, some redistribution of regular jobs between workers under contract and newcomers would be desirable - but will not be naturally forthcoming. In addition, the supply of *hours* being definitely upward sloping, within the context of regular jobs, it would be desirable to increase the number of employees and redistribute aggregate hours among them - a standard argument. Thus, whether we look at positively valued jobs, or at negatively valued hours of work, we conclude that the allocation of work between newcomers and workers under contract is inefficient.

Finally, it is easy to understand why little or no work-sharing takes place among newcomers, in the form of part-time jobs. With firms facing fixed costs of screening and training, and half the newcomers prepared to work more than full-time (as must be the case if standard working time corresponds to median worker preferences), there is ample scope for mutually agreeable contracts on a full-time basis. The special motivation of risk sharing embodied in a long-term contract would be needed to organise work sharing in the form of part-time unemployment. That motivation does not apply to work sharing in the form of part-time work for newcomers. Again, special measures will be needed to overcome the market failure and bring about a more efficient allocation of regular jobs.

The upshot of these arguments is ... precisely what we observe today in Europe! Namely, a prolonged spell of deeply depressed demand for labour, with employment declining in many firms (especially in the manufacturing sector exposed to international competition), downward rigid wages there and a modest degree of work sharing among workers under contract; with very high unemployment rates among the young entrants to the labour market (and older workers who have lost their previous jobs), and a fair degree of wage rigidity on new contracts. The resulting allocation of work among all workers is definitely inefficient, both because little or no work sharing takes place between workers under contract and newcomers, and because little or no work sharing takes place among newcomers finding employment. More efficient work sharing thus requires special measures.

5. SCOPE FOR INTERVENTION

5.1 Market failures provide a motivation for public intervention aimed at correcting inefficiencies. In the case under discussion, that motivation is enhanced by the existence of a social externality. Unemployment is not only a burden on individuals, who are frustrated in their desire to work and to enjoy a stable employment relationship. It also entails additional real burdens for society - for instance when prolonged inactivity leads to delinquency or health deterioration; that is, it entails externalities. Of course, the most immediate externality comes from the existence of unemployment compensation schemes.

In the light of the arguments reviewed above, it is obvious that public unemployment compensation schemes are important and should be maintained, in spite of some obvious drawbacks¹⁹. Now unemployment compensation accrues to the unemployed at no private cost; but it is paid out of public funds which need to be collected somehow²⁰ and thus entail a social cost. This creates an externality. Any measure resulting in less unemployment also results in less public expenditure on unemployment compensation. More positively, the money spent on unemployment compensation could more profitably be spent on reducing unemployment. *One way is to subsidise work sharing, thereby providing financial incentives to overcome the market failures.*

There are two additional reasons, specific to the issue under discussion, why public measures aimed at promoting work sharing could *possibly* be effective.

First, social security has become in most European countries a complex legal system, many provisions of which introduce additional distortions in the already imperfect functioning of labour markets. An obvious example arises when ceilings or other regressive formulae for social security contributions (employment taxes) impose a penalty on part-time jobs as compared with full-time jobs. Eliminating those distortions which discourage work sharing, possibly creating distortions which favour it, offers scope for public intervention.

Second, the organisation of working time is a complex social phenomenon, involving coordination of all kinds of activities, with numerous externalities; it falls largely outside the sphere of market allocation. To take again an obvious example, think back to the transition from the 6-days week to the 5-days week. Although 5 days became the norm for blue collar workers shortly after World War II, it took nearly twenty years before that schedule became universal, with schools adopting it late. And it is probably fair to say that consumption patterns fully adjusted to a 5-days week for all are still spreading. With further reductions in working time below 40 hours per week now emerging here and there, a number of alternative patterns of work are possible. The coordination aspects and externalities provide scope for public initiative in sorting out the costs and benefits *for society* of these alternative patterns, then for public leadership in promoting the most desirable pattern and anchoring individuals expectations in that respect.

These points are taken up again in Part II.

6. INTERLUDE (Sorbet)

Before turning to consider specific measures aimed at promoting work-sharing and recent experience with them in Europe, it is suggestive to speculate briefly on how a substantial decline in the demand for regular labour would be handled in a decidedly cooperative environment - like a kibbutz, a network of cooperatives (as in Mondragon) or an integrated set of family businesses. For definiteness, think about a hypothetical kibbutz where the major use of labour (entirely supplied by the members) goes into the manufacturing of some gadget sold outside. Normally, young members are taken up into the factory work force and trained to replace retiring older members. Assume now that a non-negligible decline occurs in the need for labour input, a decline that was not anticipated with certainty, although its possibility may have been contemplated - say a decline due to a major accidental plant destruction or to a shortage of raw materials, to a major decline in demand for the gadget, to the introduction of a new labour saving technology, or a combination of these. And let the decline be expected to last for some time, with progressive resorption over a period of months or years at a highly uncertain speed. How would the kibbutz community react to such an event? Most likely, a whole set of measures would be combined, such as: (i) diverting some labour to other uses, previously endowed with lower priority, like improving the grounds, repainting the buildings,...; (ii) excusing from work in the factory the older, less able or less motivated workers, as well perhaps as some with high productivity alternatives (like young mothers, or members with valuable personal projects); (iii) reducing across the board effective working times, through either shorter hours, or longer vacations, or occasional days off; (iv) calling some of the young workers into the workforce on a part-time basis, with the rest of their time devoted to continued education, or to the other work mentioned under (i).

The list could be extended. The point I wish to make is that various forms of work sharing would *naturally* be introduced; and it is highly unlikely that a large number of young members would remain totally inactive for prolonged periods. There is room for speculation as to who would carry out the casual activities mentioned under (i). Would these be mostly entrusted to the young, or would some of the members previously employed in the factory turn to such tasks? More specifically, would one observe simultaneously the introduction of some young

members into the factory workforce *and* the diversion of some factory workers to casual tasks -either part-time or full-time? There is no compelling answer to that question. The only safe consideration is the following. If it were anticipated that future needs for labour will be qualitatively so different from current needs that training acquired now will be of little value in the future, then young workers would be mostly oriented towards casual activities and would not be trained now for factory work.

This digression provides a useful background against which to evaluate the alternative forms of work sharing which have been considered recently by European policy-makers. I will group them under three headings: *trading jobs*, i.e. replacing a worker under contract by a newcomer; *sharing jobs*, i.e. filling a single working post by more than one person; and *trading hours for jobs*, i.e. reducing working time for workers under contract to create new jobs.

PART II: APPLICATIONS (HOW? HOW NOT ...)

7. TRADING JOBS (Early Retirements)

7.1 Trading jobs between workers under contract and unemployed persons is the simplest, and in a way the most natural, form of work sharing. In particular, it does not interfere at all with the organisation of work. Because the value to individuals of regular jobs varies from one person to the next, there is scope for mutually advantageous trading²¹ .

By definition, the holder of a regular job places a non-negative value on that job - otherwise, (s)he would quit. But that value could be small - in which case a small "bribe" would induce the holder to give up the job. If the "bribe" per year falls short of the level of unemployment compensation, the state can "buy" the job for an unemployed person, at no net cost (the compensation paid to the quitter is no longer paid to the new employee); this generates a positive externality, namely the value of the job to the new employee.

Also, the value of a job is often blown up artificially by the social legislation. For instance, some statutory pensions are proportional to average salary over the last five years prior to retirement age; consequently, quitting during these five years entails a cost by far in excess of the salary itself; see Hart (1984, p. 27). The state could then step in to correct the externality - say by neutralising the effect of early quitting on the pension.

These two ideas are combined in early retirement schemes, as introduced in several European countries over the past decade (namely, in 1976 in the Netherlands and Belgium, in 1977 in the UK, in 1981 complementing earlier measures in France, in 1984 in Germany). As explained in Section 2, workers close to retirement are natural candidates for giving up jobs, under moderate financial incentives (but subject to suitable adjustments in pension rules). All the schemes under consideration permit early retirement, at no loss of pension rights after the normal age of retirement, and with an income allowance over the intermediate years. The level of that transitory income, and its sources, vary from scheme to scheme; typically, the basic component corresponds to unemployment compensation, and an additional allowance is sometimes provided by the firm or by the state. In several schemes, the retired worker must be replaced by an unemployed (a young one, in Belgium); or else, the

The replacement ratio is known only for the "Contrats de solidarité", where it is reportedly close to 95 %. It is of course null in case of dismissals, and held to be relatively low under the previous schemes which did not include mandatory replacement provisions. The gross cost of these programs, as estimated from national accounts, seems to be of the same order of magnitude as in the UK (around £ 3200 per beneficiary per year). As of April 1983, the "Contrats de solidarité" program was discontinued; instead, voluntary retirement was offered to all workers aged 60 or more with 37.5 years of labour force seniority. Apparently, no mandatory replacements are involved... .

(iii) In Belgium, a number of early retirement schemes have been implemented since 1977; the age of eligibility has been mostly 60 for men and 55 for women; except in the case of dismissals, replacement by an unemployed person aged less than 30 is mandatory. Observed replacement ratios reach 63 % overall and 83 % if dismissals are set aside. As of October 1984, the overall number of beneficiaries totalled 138.000 - see Sonnet and Defeyt (1984).

These data are very fragmentary, and leave unanswered many questions worthy of further investigation. In particular, one would like to find out:

(i) What proportion of the effectively eligible population has joined voluntary programs of early retirement, and how that proportion has varied with age, with sex, with qualifications or occupations and with the income maintenance provisions of the programs; hopefully, there is enough variation in the provisions, both across countries and within countries across specific groups, to throw some light on this issue.

(ii) What is the net impact of early retirement programs on labour supply, taking into account natural attrition of the labour force in the relevant age groups. (This is basically a routine calculation from data on demography and participation rates - but I do not know the extent to which the relevant data are readily available.)

(iii) What is the net impact of these programs on employment, taking into account normal replacement ratios at the times of normal retirement. (This is a much more problematic calculation, requiring new microdata on replacements.)

(iv) How the answer to questions (i) and (iii) is affected by mandatory replacement provisions.

(v) What are the net budgetary costs of alternative programs.

While awaiting results of further research on these points, it seems safe to draw two conclusions from the British, French and Belgian experiences. The first conclusion is that *a mandatory replacement provision seems to make a crucial difference in terms of job creation*. In contrast to the very high replacement rates quoted above for the UK, France and Belgium, figures as low as 10 or 20 % are reported for non-mandatory programs, for instance in the Netherlands; see Commissariat Général du Plan (1985).

(These figures may be partly illusory, to the extent that one might expect replacements to be staggered over time, with the high mandatory rates concealing some hirings unrelated to the scheme and the low voluntary rates failing to take account of subsequent hirings.)

The second conclusion is that the potential reduction in the effective labour supply *of workers under contract* through early retirement is definitely substantial, as witnessed by the French and Belgian figures. With legal pension schemes largely financed through redistribution rather than through accumulation, the official retirement age is (like standard working time) a "public good", hopefully corresponding to a median worker's preferences²². In that case, about half the labour force should have a potential interest in early retirement, at a transitory income close to retirement income, with the proportion of volunteers increasing smoothly with the income replacement ratio. Surveys conducted in France and the Netherlands confirm these common sense observations²³.

In the same way that the attractiveness of early retirement varies across individuals, it also varies across firms. One important aspect is the extent of seniority bonuses, which provide an inducement to replace senior workers by less costly beginners. Another aspect is the extent to which firms try to update the skill composition of their work force; early retirements provide advance opportunities for doing so with constant employment.

Further empirical research, of the kind outlined above, is obviously needed to assess the practical limitations, quantitative scope and budgetary implications of work sharing through early retirements.

8. SHARING JOB (Part-time Work)

This form of work sharing occurs whenever a single working post is filled by more than one person. Two separate issues will be considered under this heading, namely early retirement on a part-time basis with replacement on the same basis, and part-time work in general.

8.1 Part-time early retirement

In 1982, the UK put an end to the "Job Release Scheme", under which several hundred thousand persons had retired early and many job seekers had been hired over a 5 years span, and replaced that program by a "Job Splitting Scheme", under which (among other provisions) a worker could retire early on a half-time basis, and be replaced on the same basis by an unemployed. After 12 months of operation, the Job Splitting Scheme had covered 578 jobs!

In 1983, the French "Contrats de solidarité", which had been used by 180.000 persons over a two years span, were put to an end, and replaced by a scheme offering incentives to half-time early retirement with replacement. That scheme, parallel to the British Job Splitting Scheme, was equally unsuccessful²⁴.

These experiences are definitely sobering, for progressive retirement would seem to convey a number of advantages in comparison with abrupt retirement. When reporting on the results of sample polls about the preferences of workers regarding earnings and working time, The Conference Board in Europe (1981) notes that diversity of preferences is the rule, with a single exception where a large majority emerged; namely, the question on progressive retirement in an IFO survey among German workers in 1979: *70 % of respondents were in favour of progressive retirement!*

The apparent failure of progressive retirement schemes in France and the UK should be considered in the light of broader trends concerning part-time work.

8.2 Part-time work

Some data about part-time work in Europe are collected in the Appendix. The more striking features revealed by these data are the following:

(i) Part-time workers are almost exclusively women; the percentage of men working regularly on a part-time basis is extremely small; although that percentage has grown somewhat in recent years, the growth is accounted for by older workers or younger workers in special programs; *there is little or no indication of systematic job sharing among men.*

(ii) The percentage of women working regularly on a part-time basis varies substantially across countries, ranging from 40-45 % in such countries as the UK and Denmark, down to 20 % or less in France and Belgium; *variations across countries are much more pronounced than variations over time.*

(iii) High percentages of part-time work tend to be associated with above average labour force participation rates, for women; when participation rates are translated into full-time equivalents, their variability across countries is sharply reduced. This observation suggests that promoting part-time work would increase participation rates, so that the increased employment would not be matched by a commensurate fall in unemployment; nor would it be matched by a commensurate increase in aggregate labour input.

(iv) In a country like the UK, where part-time work of women is wide-spread, the percentage of part-time workers varies substantially with age and family composition. This is consistent with the hypothesis that the extent of part-time work largely reflects the preferences of workers, accommodated by the firms, rather than the other way around. A more conclusive test of that hypothesis would be welcome, but is not easy to construct. Also, preferences for working time expressed by survey respondents in other countries (like Germany and France), where part-time work is less wide-spread, imply a desired percentage of part-time work close to the 40-45 % observed in the UK and Denmark. Furthermore, in a country like France with little part-time work, the percentage of part-time workers has increased recently (after 1980), and the increase has been uniform across industries. On the other hand, in a country like the UK, the percentage of part-time work is stationary. These observations are again consistent with the hypothesis that high rates of part-time work reflect worker preferences, with less (but growing) accommodation of these preferences (by firms, or unions, or both) in the countries where part-time work is less developed.

(v) In all countries, part-time work is more wide-spread in services than in industry. In all sectors, it is concentrated in jobs entailing less responsibility and requiring lower qualifications. Hourly earnings of part-time workers are lower than those of full-time workers.

(vi) Hours worked by part-time workers are largely concentrated at or near the half-time mark. Yet, there is a potential supply of part-time work near the 30 hours, three quarter time, mark. That supply does not seem to be matched by a corresponding demand.

(vii) An attempt was made in 1984 in the Benelux countries to hire public servants on an 80 %, 4 days-a-week, basis. No systematic report on that experiment is available yet. Casual evidence suggests that it was not very successful, due to insufficient reorganisation of work. That experiment clearly deserves further study.

8.3 The conclusion emerging from this brief survey is fairly clear. Job sharing through part-time work has not developed in Europe as a means of work sharing to alleviate cyclical unemployment. It has not spread among men. The countries where part-time employment of women is growing are the countries where that form of employment is still abnormally infrequent, and where one would expect it to spread irrespective of the recession.

Although I have not seen hard data, I suspect that part-time work has not been used either as a means of work sharing for workers under contract in firms with declining employment.

The reasons seem to lie with a natural preference for full-time contracts, shared by firms and male workers; and with a lack of flexibility in providing for part-time jobs on a more-than-half-time basis.

Indeed, if job sharing were to be used systematically as a way of absorbing fluctuations in the supply of regular jobs, a natural approach would consist in promoting new hirings on a 75 % or 80 % basis, combined with reorganisation of work aimed at extending simultaneously the rate of utilisation of capital. The latter measures would be particularly appropriate at times where spare capacity is scarce. Some speculative remarks on that theme are offered in Section 10.3.

9. TRADING HOURS FOR JOBS (The Working Week)

9.1 In the long run, reductions in hours worked have been an important component of welfare gains, accounting for something like 25 % of overall gains by a crude estimate²⁵. At the same time, these reductions have played an important role in reconciling full employment with productivity gains. (See Tables 1 and 2 above.) (Of course, the respective extents to which shorter hours have been permitted by, or have triggered, technological progress are not separately identified.)

These are long-run trends. The question of interest here is short-run fluctuations. During recessions, hopefully viewed as temporary, could one stimulate employment (create jobs) by *anticipating* trend reductions in hours? Offhand, this is a tempting suggestion. In practice, it seems difficult to implement. It was tried in France in the thirties, with little practical impact on effective working time, and a questionable immediate impact on employment. Over the past decade, the theme of a 35 hours week has been the subject of much controversy, enlivened for instance by the strike of German metal workers in 1979 or by official pronouncements (of the Belgian Government in 1978, of the French Government in 1981,...). As of today, there is no indication that stimulating employment through shorter hours is feasible on a significant scale in the short run, and longer-run effects remain subject to much uncertainty. At best, the nature of the difficulties associated with this approach become progressively better understood.

I begin by reviewing the theoretical arguments for and against this approach, then summarise the more recent experience.

9.2 The theoretical ground for advocating shorter hours during a prolonged recession is of course the prospect for correcting the inefficient distribution of work between employees under contract and job seekers. (It was explained in Section 4 why the market fails to generate an efficient allocation.) If a given number of hours is to be shared more efficiently between the two groups, it seems natural to impose shorter hours on workers under contract, with identical hours for them and for newcomers. (At least, this is more natural than laying off workers under contract to hire newcomers.) Hopefully (wishfully?), new hirings might occur in the same proportion that hours are reduced.

There is an important qualification, however. The logic of implicit contract theory is that firms should use labour up to the point where its marginal value product is equal to the opportunity cost of workers, which is typically well below the full wage cost to firms in a recession. That logic applies to workers under contract - not to newcomers, who are hired only when their marginal value product covers their full wage cost. Consequently, if hours of workers under contract are reduced, firms operating at a marginal value product of labour below full wage costs will not hire replacements, unless the reduction in hours is sufficient to bring the marginal value product of labour up to the full wage cost. Put more simply, *firms engaged in labour hoarding will not respond to shorter hours by new hirings*, for the same reason that they do not offset natural attrition of their work force by new hirings. (Also, such firms will show relatively little reluctance to reduce hours, since they have excess labour anyhow.) *Shorter hours will induce additional hirings only in those firms which are already hiring*, to offset quits or expand employment. Such firms are a minority during a prolonged recession; and they are concentrated in specific sectors²⁶.

Also, these firms will show great reluctance to reduce hours. In order to increase employment, it might be preferable to create incentives for these firms to hire newcomers on a part-time basis - say on a 75 % or 80 % basis, with the prospect of switching to full-time work in these expanding firms as the pressure of unemployment abates.

Of course, had the newcomers been part of a market clearing process *ex ante*, so they would be part of the labour hoarding today, and shorter hours would be an attractive alternative to layoffs. The problem is again one of asymmetry between sharing work among workers under contract, versus sharing work between workers under contract and the unemployed.

To overcome that asymmetry (to bridge the gap between the marginal value product of labour and full wage costs), one may consider the more radical measure of shorter hours with mandatory new hirings. That is, one may consider imposing on each firm that it should increase employment by a fixed percentage, while reducing hours for all.

Clearly, measures of that kind entail a high degree of arbitrariness and are difficult to implement. To say that new entrants into the labour force would have a job today, if they had been able to contract yesterday, is not to say that the employment *in every firm* would thereby be increased *in the same proportion*. (That arbitrariness would be alleviated, but not eliminated, if the hiring obligations were tradable among firms.) Also, wages today would be different, and so on. Only if the measure under discussion had been fully anticipated could one claim that it is non-discriminatory; but existence of a rational expectations equilibrium under proportional quantity constraints is open to question. And it is clear that once such a measure is announced as a contingent plan, it will discourage normal hirings to an extent which could be quite harmful.

Two additional pit-falls of a mandatory general reduction in hours should be mentioned²⁷. The first concerns effective hours of plant utilisation. In firms operating one or two shifts for a conventional number of hours, reducing weekly hours is apt to result simply in reduced plant utilisation and output, with no effect on employment. (A typical example is offered by automobile plants working two shifts, with little or no possibility of keeping plant hours constant when weekly schedules of workers are reduced by a few hours.) It is only when the number of shifts is simultaneously increased that employment will rise naturally. (The limiting example is offered by plants operated on a continuous basis, where shorter hours per worker entail the need of additional employment.)

The second pit-fall concerns effective wage costs. If shorter hours result in higher hourly wage costs, whatever positive effects on employment may be associated with work time reduction must be weighed against the negative effects associated with the wage increases. These may have two sources. On the one hand, effective wage costs may rise due to the fixed costs of hiring and training, now spread over fewer hours; and due to the capital costs, similarly spread over fewer hours if plant utilisation is linked to the working schedules of employees. On the other hand, workers on shorter hours may attempt to protect their disposable income by claiming higher hourly wages, and a less than proportional reduction in take home pay.

The risk that shorter hours result in higher effective wage costs will be tempered by the extent to which employment-conscious unions substitute hiring claims for wage claims. The difficult question, ultimately, is to assess the long-run incidence of hours worked on effective wage costs. The instantaneous increases arising from shorter hours at unchanged take home pay may be partly compensated by slower wage increases thereafter. Whereas the instantaneous wage moderation accompanying demands for more employment may be partly compensated by catching up later. In either case, speculation about future wage patterns is needed to draw firm conclusions.

Finally, there is a presumption that many firms are able to offset a gradual reduction in weekly hours by productivity increases without new hirings.

9.3 The salient features of recent European experience with hours worked per week seem to be the following.

(i) Over the past 10 years, average hours worked have declined, whether measured per week or per year - see Tables 5 and 6. The main explanation for this decline lies in the near disappearance of overtime work. On the one hand, there was less need for overtime work, due to the depressed demand for output. On the other hand, unions and governments discouraged overtime work, in order to stimulate new hirings²⁸.

(ii) In those cases where a reduction in hours with mandatory new hirings has been put forward, it has met with adamant opposition from employers. Thus, a proposal by the Belgian Government in 1979 to subsidise a reduction of the standard working week from 40 to 38 hours with new hirings corresponding to 3 % of extant employment, was rejected by the employers and some unions²⁹. When offered to individual firms on a voluntary basis, the proposal met with negligible success. In France, the "contrats de solidarité" offered in 1982 inducements to new hirings offsetting either reductions in working time or early retirements; out of some 12.500 contracts signed by september 30, 1982, only 4.5 % were concerned with reduction of working time, and 10 times as many new hirings resulted from early retirements as from shorter hours³⁰.

(iii) Where a reduction in standard hours was introduced without mandatory new hirings, it seems to have been conducive to very few new hirings in the short run - with one exception mentioned below. At least, *those who have looked for evidence of the new hirings do not seem to have found it*. Such was the case, in particular, for surveys conducted in Belgium in 1980 and more recently in France³¹. The only clear cases of new hirings came from firms operating on a continuous basis with several shifts. Shorter hours per shift necessarily implied some (less than proportional) new hirings³².

| | Full-time Blue-Collar Workers | | | All Employees | | |
|-------------|----------------------------------|------|-----------|---------------|------|-----------|
| | 1974 | 1982 | 1982/1974 | 1974 | 1982 | 1982/1974 |
| Belgium | 1620 | 1470 | .910 | 1700 | 1500 | .884 |
| Denmark | 1830 | 1760 | .961 | | n.a. | |
| France | 1780 | 1610 | .905 | 1820 | 1700 | .936 |
| Germany | 1820 | 1690 | .931 | 1740 | 1640 | .941 |
| Italy | 1700 | 1600 | .949 | 1690 | 1650 | .979 |
| Netherlands | 1720 | 1650 | .959 | 1790 | 1670 | .931 |
| U.K. | 1910 | 1800 | .944 | 1770 | 1620 | .917 |
| Sweden | 1740 | 1590 | .913 | 1630 | 1530 | .938 |
| Canada | 1920 | 1880 | .979 | 1830 | 1720 | .938 |
| U.S. | 1950 | 1900 | .975 | 1710 | 1610 | .940 |
| Japan | 2090 | 2120 | 1.015 | 2100 | 2080 | .992 |

TABLE 5. Annual hours worked, 1974-1982

Source : Commissariat Général du Plan, *Aménagement et Réduction du Temps de Travail*, Paris, La Documentation Française, 1985, p. 75.
(from OECD data)

| | 1972 | 1975 | 1978 | 1979 | 1980 | 1981 | 1982 |
|-------------|------|------|------|------|------|------|------|
| Belgium | 41.7 | 37.1 | 37.6 | 38.1 | 35.7 | 35.9 | 34.9 |
| France | 45.0 | 42.4 | 41.3 | 41.1 | 40.9 | 40.6 | 39.4 |
| Germany | 43.2 | 40.9 | 42.0 | 42.1 | 41.6 | 41.3 | 40.0 |
| Ireland | - | 42.2 | 43.4 | 43.4 | 42.3 | 42.5 | 41.7 |
| Italy | 41.9 | 41.5 | 39.4 | 39.7 | 38.4 | 38.6 | 37.5 |
| Luxemburg | 43.9 | 40.9 | 40.2 | 40.8 | 40.2 | 40.6 | 39.0 |
| Netherlands | 43.9 | 40.8 | 41.1 | 41.1 | 40.8 | 40.7 | 40.6 |
| U.K. | 43.0 | 41.8 | 42.2 | 42.0 | 40.7 | 41.4 | 41.4 |

TABLE 6. Average weekly hours worked (adjusted for absences), blue-collar workers, manufacturing.

Source : Eurostat, "Gains horaires, durée du travail", 2, 1983.

These findings are sobering, and confirm the theoretical warnings that reductions in hours will not create many jobs in the short run. At the same time, there is a *presumption* that shorter hours per week somehow imply more jobs in the long run - other things equal. The reasoning calls on arithmetic... . The analogy with wages is instructive. The short-run elasticity of employment with respect to real wages is generally believed small, whereas the long-run elasticity at constant output should be close to unity on grounds of constant factor shares. Similarly, the short-run elasticity of employment with respect to hours per week is apparently small, for the reasons just indicated, whereas the long-run elasticity should be close to unity on grounds of arithmetic. Both arguments of course assume that productivity, technology and output are unrelated to wages or hours; and departures from these assumptions may well prove significant in the long run.

This is an area where uncertainties are substantial. Several attempts have been made to throw some light on the issue by simulating macroeconomic models; see, for instance Charpin and Mairesse (1978), Driehuis and Bruyn (1979) or Plasmans (1985). Simulations typically compare employment forecasts with and without reduction in weekly hours, under alternative assumptions about wage developments. Sometimes, explicit hypotheses about the elasticity of output with respect to hours are also introduced.

My own attitude towards these simulations is one of polite scepticism. Too little is known about the elasticity of employment with respect to weekly hours *in a context of general recession* for these simulations to be reliable. Estimates of production functions where hours and number of employees appear as separate arguments, based on time series data covering the past thirty years, are not apt to measure that elasticity accurately. And I have not seen estimates based on recent microeconomic data. Accordingly, I regard the fragmentary information from the surveys mentioned under (ii) above as more instructive, for short-run purposes; and I refrain from drawing long-run conclusions.

10. POLICY PROSPECTS AND CONCLUSIONS

10.1 Hopefully, Part I of this essay may have convinced the reader that: (i) some form of work sharing would be called for to absorb efficiently sizeable fluctuations in the demand for labour; (ii) market institutions fail to organise work sharing between workers under contract and job seekers, or among job seekers themselves; (iii) there is scope for public intervention in correcting that market failure through promotion of work sharing during deep recessions.

It is thus not surprising that interest in work sharing as a means to alleviate unemployment should be lively in Europe today and that a set of specific measures meant to promote work sharing should have been introduced by European governments. The brief review of our experience with these measures in Part II reveals that: (i) early retirement schemes with some form of income maintenance have pulled large numbers of senior workers out of the labour force, and have led to roughly commensurate numbers of new hirings when and only when the schemes specified mandatory replacements; (ii) part-time work has not spread as a means of sharing work among job seekers, or between job seekers and workers under contract (the total failure of part-time early retirement schemes being particularly striking); (iii) those who have looked for evidence of job creations induced by reductions in weekly hours have not found any appreciable short-run effects; this leaves open the question of potential longer-run effects, a question surrounded by the related uncertainties of capital utilisation, wage costs and productivity adjustments.

These empirical findings are generally consistent with theoretical considerations, to the extent that: (i) the (positive) value of holding a regular job varies substantially across individuals and over an individual's working life, suggesting in particular that a substantial proportion of the members of the older generations could be induced at little cost to hand over their jobs to new recruits; (ii) the fixed costs of hiring and training deter firms from using part-time labour, outside of special circumstances (like peak loads within the week), whereas enough workers eager to work full time are forthcoming; (iii) firms engaged in labour hoarding, which may well be in a majority during deep recessions, will not respond to shorter hours (or lower wages, for that matter) by new hirings; and firms which are hiring new employees will resist reductions in hours.

It is always comforting for an economist to reconcile facts with theoretical predictions. And it is definitely useful to understand better why some measures prove relatively effective and others do not. Looking at the issue of work sharing from the viewpoint of contracts for regular jobs seems helpful on that score.

At the same time, it is discomfoting to be left with a situation where clearly identified market failures offer scope for Pareto improvements through intervention, but where the effectiveness of intervention is limited in the short run. Such a situation seems to prevail on the work-sharing front.

10.2 The immediate implications of this essay for policy purposes are the following:

(i) Early retirement with mandatory replacement stands out as the most promising approach to work sharing in the short run; in several countries, that approach has hardly been used, and offers a genuine prospect for some alleviation of unemployment - of youth unemployment, if replacements are reserved for the young; more detailed work aimed at quantifying that prospect, both numberwise and costwise, should be encouraged (or discovered, to the extent that it may exist unbeknown to me); specific questions have been raised in Section 7.2.

(ii) Shorter weekly hours stand out as the least promising and most uncertain approach to work sharing in the short run; at least, that approach should not be used indiscriminately; it will produce positive employment effects in those sectors (including metal working?) where plants are operated on a continuous basis, it will produce negative output effects without gains in employment in those sectors where hours of plant utilisation are given by the working week; and longer-run effects will be negative if shorter hours imply higher effective hourly wage costs.

(iii) If one accepts the view that firms engaged in labour hoarding will not respond to either lower wages or shorter hours by new hirings, one should concentrate the promotion of work sharing on expanding and new firms; in these firms, part-time work by the new employees may well be the more natural pattern of work sharing.

(iv) Part-time work stands out as the most disappointing approach to work sharing, in the sense that its potential to alleviate unemployment, which could be substantial, has not been exploited at all in the recent European experience. This is all the more disappointing since part-time early retirement would seem so much more natural and appealing than abrupt early retirement; given the substantial measure of success met by early retirement programs and the overwhelming interest expressed by workers for gradual retirement, it is doubly disappointing to observe the total failure of the timid attempts in that direction. Although efforts to promote part-time work are bound to be slow in producing their effects, because they call for substantial reorganisation of work, such efforts are worth undertaking in a long-run perspective.

10.3 From the longer-run viewpoint, three interrelated questions must be faced, to which only speculative answers can be given today:

(i) How long will it take to restore a measure of full employment in Europe (say, with unemployment rates for the young of 5 % or so)?

(ii) Will the historical trend towards a shorter working week maintain itself in the future?

(iii) How seriously should we entertain the prospect of other deep recessions, comparable to those of the thirties and the eighties, in the future?

If one fears that full employment will not be restored in Europe for several years to come (and this is my personal reading of the EEC forecasts), and that deep recessions may occur again (for the reasons explained in Section 3), then one should look seriously at part-time work as a means of sharing jobs during such recessions. If in addition one fails to see why the historical trend towards shorter hours should come to a halt, then one should (in my opinion) take seriously the issue of maintaining the periods of use of capital and of provision of services. Indeed, as the working week becomes shorter, it is increasingly important to uncouple individual working hours from the period of business activity (over which capital is used and services are provided). For otherwise overhead costs will creep up, and the benefits of additional leisure will be partly offset by the deterioration in availability of services. This remark is linked to the previous one because *uncoupling individual working hours from the period of business activity is bound to open up new prospects for part-time work*, at a gain in overall efficiency as well as in labour-markets flexibility.

A number of schemes to that effect have been proposed, ranging from the generalisation of half-day shifts 6 days a week, to rotating vacation periods of up to 3 months per year³³. The most appealing scheme to my mind would be a generalisation of the 4 days working week with 6 days of activity. A working post then corresponds to either one full-time and one half-time job, or two 75 % jobs, or three half-time jobs - or one and a half full-time jobs with three full-timers filling two working posts. Aside from the obvious advantages of reducing commuting time for workers by 20 % and increasing the use of capital by up to 35 % (6 days of 9 hours versus 5 days of 8 hours), this scheme would generate flexibility in the provision of part-time work, especially on a 75 % basis. Hopefully, it would also generate flexibility in the provision of part-time early retirement, and facilitate job sharing through part-time work among the new employees of expanding and new firms. A new perspective would thus be opened for resorting to part-time work as a means of work sharing to absorb fluctuations in the markets for regular jobs. A theme of the present paper is that such a perspective is needed, but not easy to find... .

Of course, a 4-days week with 6 days of activity is a highly speculative as well as controversial proposal. It is speculative, because we lack solid information, beyond the isolated experience of a few firms which have chosen to operate on that basis (for reasons of their own)³⁴. And it is controversial, because six days of activity means Saturday work (typically two weeks out of three) and a reversal of the trend towards longer week-ends with less and less organised activity then. Reversing that trend has an obvious welfare cost, to be weighed against the associated efficiency gains. On the other hand, it may be indispensable to protect the period of activity and use of capital, if the working week is to be reduced further; and it may be natural to reduce working time further as technological progress accelerates... .

I have no particular authority to discuss this speculative proposal. But I may refer back to two points made earlier, which are of relevance here. The first is that, in a world where firms and (male) workers have a common preference for full-time regular jobs, temporary reliance on 75 % jobs when there is excess supply of labour will require inducements of some kind or other. It is a challenging task to think through a coherent approach to this issue. The open questions are numerous, and the answers are not obvious. At a time when only 3 out of 4 new entrants into the labour force are employed, if one had a 4 days week with 6 days of activity, should one penalise full-time work, or subsidise part-time work, or both? If there is a penalty, should it be levied on the employer or the employee, or is that issue immaterial? Should hours above the average effectively worked, counting the unemployed, carry social security benefits, like rights to pensions and unemployment compensation? A whole set of intriguing questions arise, which require a logic combining ex ante risk sharing considerations and incentives considerations.

The second point made earlier (Section 5) is that a major reorganisation of work involves numerous externalities and therefore calls for guidelines and coordination from the public sector. In particular, a 4 days week with 6 days of activity requires a new coordination between production activities, services, leisure activities, schools, etc... . Such coordination can only evolve over time, and is facilitated if the new pattern is known ahead of time. It also involves the public sector directly, through the provision of public services. It would certainly make sense at this time for the post office, administrative services open to the public and the like, to consider six days of activity, with more reliance on part-time workers.

This may well be the only fruitful direction in which thinking about the working week should be orientated. As I said, the suggestion is speculative, at best. And it is not clear that governments are able to implement such far-reaching policies. But there are obvious merits to channelling the current debate about work sharing in those directions which experience and theory alike suggest as the more realistic.

APPENDIX: PART-TIME WORK IN EUROPE

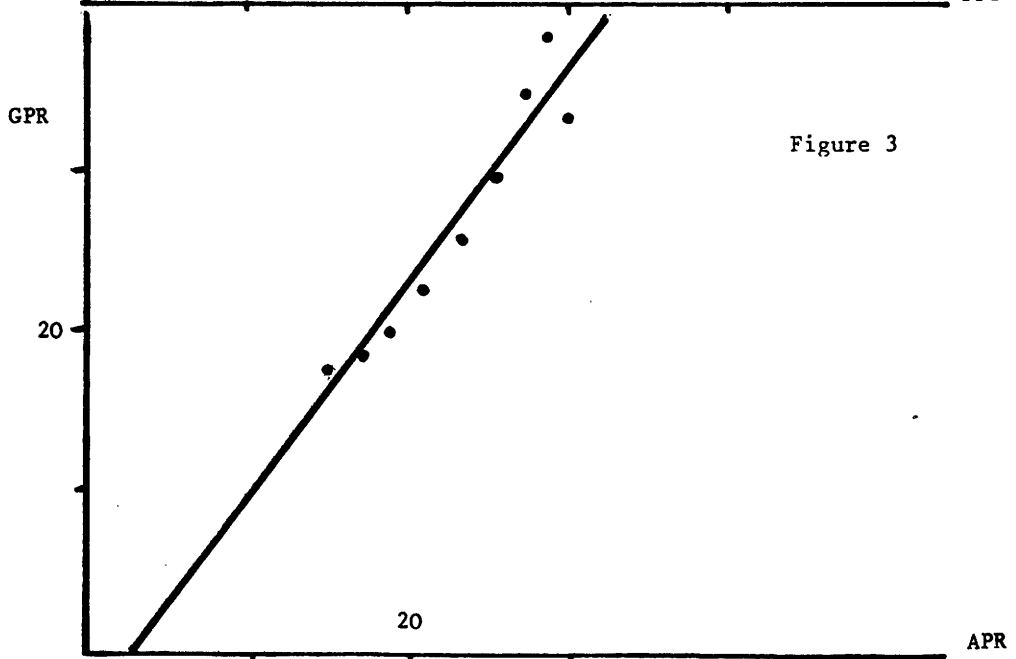
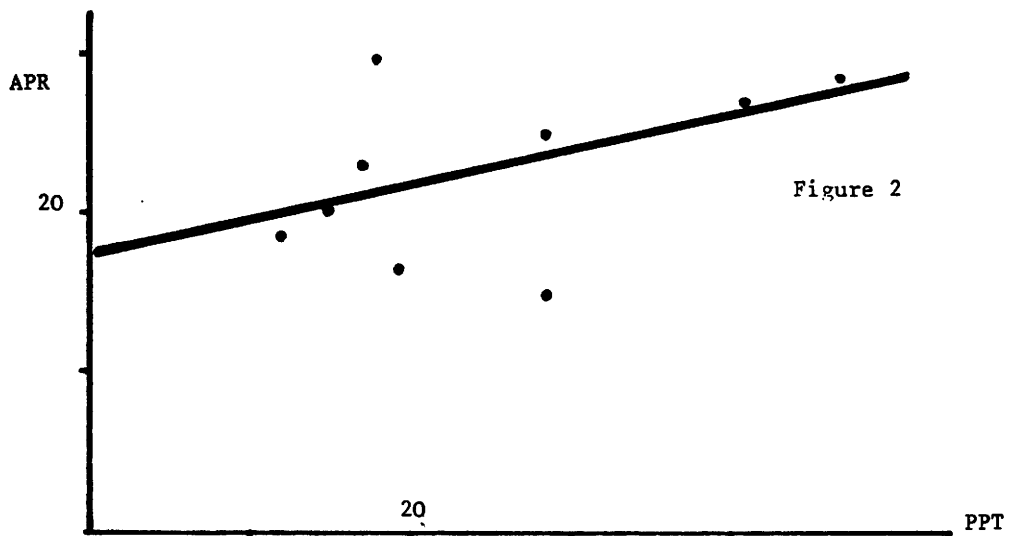
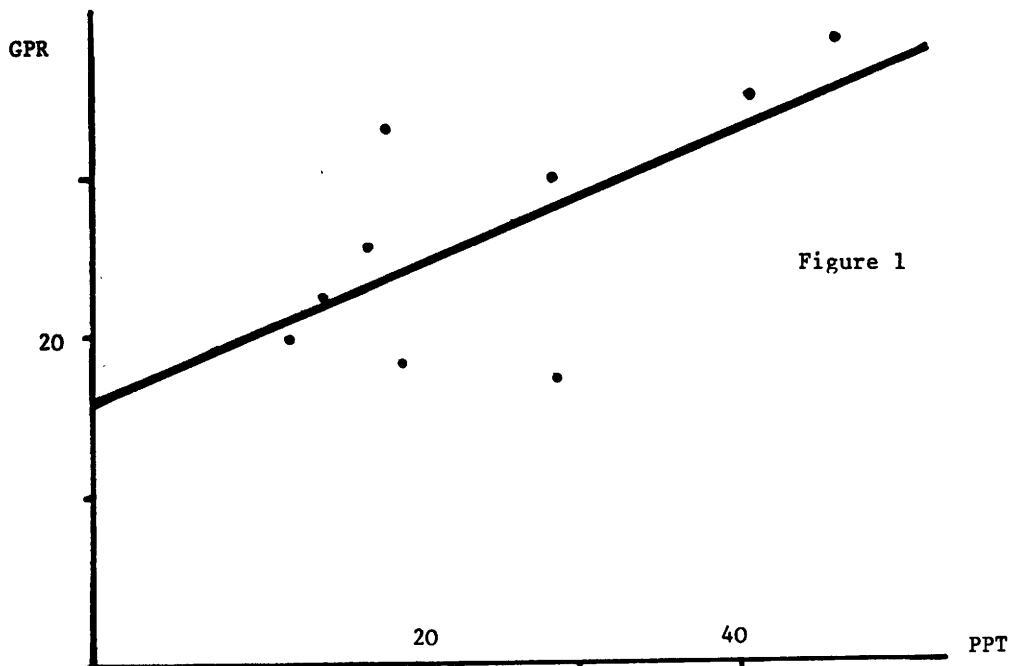
(The 6 sections of this appendix correspond to paragraphs i-vi in Section 8.2 of the text.)

A.1 An overview of the extent of part-time work in Europe, and of trends over the last decade, is presented in Table 7, which gives the proportion of employees working part time, for men and women, in 9 European countries, over the period 1973-1983. The percentages for men are uniformly low, and hardly rising. The percentages for women are 10 times as high, on average, and rising in some but not all countries. The share of women in the total number of part-time employees is accordingly high in all countries (Table 8).

A further indication is provided by Table 9, which gives, for the single year 1983, the percentage of part-time workers in 4 age groups, separately for men and women, in the same countries (plus Greece). The contrast between the situation for men and women is now much sharper. Rates of part-time work for men are lowest in the "prime age" group (25-49), highest after retirement age, and next highest among the young (14-24). For women, the same rates are rising continuously with age; in the prime age group, they stand uniformly above the average rates of Table 7.

A.2 Tables 7 and 9 reveal that the percentage of active women working part time varies substantially across countries, ranging from 40-45 % in the UK and Denmark down to 20 % in France and Belgium. One would like to understand the nature and the causes of these inter-country differences.

A.3 A first observation is that high rates of part-time work tend to be accompanied by high rates of labour force participation. Table 10 lists side by side the gross labour force participation rates (GPR) for nine countries and the proportion of employed women working part time (PPT). The data are reproduced in Figure 1, together with the regression line $GPR = 16 + .43 PPT$. In order to compute an adjusted labour force participation rate (APR), I have treated part-time employees as if they worked half-time, and assumed identical unemployment rates among full-time and part-time workers. The results of the computations are given in column (3). Figure 2 reproduces the data on APR and PPT, together with the regression line $APR = 18 + .2 PPT$ (where the coefficient .2 is not significant). Thus, adjusted participation rates are not significantly affected by the extent of part-time work. The relationship of gross to average participation rates is depicted in Figure 3, where the regression line $GPR = -4 + 1.35 APR$ gives a very good fit.



A.4 In all countries, labour force participation rates of women vary with age and marital status (Table 11); these variations are quite systematic. (In the age group 14-24, married women display the highest participation rates; in the age group 25-49, single women display the highest rate, married women the lowest; after 50, the rates for married women, and for widows or divorcees are equal.)

In the UK, the high percentage of part-time women workers conceals substantial differences related to marital status. Table 12 reveals a percentage of 50 % for married women, as against 20 % for unmarried women. The difference is most pronounced at young ages and declines steadily to near equality in old age. Equally striking differences emerge in Table 13, where the variables of classification are marital status and the age of the youngest child. Married women with young children are most inclined to work part time, unmarried women with no young children are least inclined to do so. It seems difficult to impute all these differences to the behaviour of employees, and much more natural to see them as reflecting workers preferences.

Survey data about preferred working time, collected in countries where part-time work is less prevalent, point towards the same conclusion. Thus, in a survey conducted in Germany in 1978 (the results of which are summarised in Table 14), some 40 % of women respondents expressed a preference for working less than 35 hours a week. (The corresponding percentage for men is 14 %). 40 % is very close to the actual percentage in the UK. Analysing the results of a survey conducted in France in the same year, Baroin (1982, p. 36) concludes that the percentage of active women working part time could easily double, if the demand for that kind of jobs were accommodated³⁵. (Because 60 % of the increase would come from women switching from full-time to part-time work, no change in output is at stake.) If doubled, the percentage of employed women working part time in France would come close to the actual British level.

One naturally wonders whether the growth in the rate of part-time work of women in countries like Belgium, France and Germany is due to a generalisation of that pattern of work, or whether it simply reflects the more rapid growth of sectors (like retail trade) where that pattern is more prevalent. French data, available annually for 38 sectors, answer that question unequivocally: the proportion of part-time workers for 1983 is the same, whether the proportions in individual sectors are weighted by employment for the sector in 1983, in 1980 or in 1975 (namely, .200, .198 and .197); the same results hold for services (namely, .209, .208 and .209) and nearly so for industry (.113, .112 and .107). (See Table 15.) There is thus clear evidence of an economywide generalisation of part-time work, probably reflecting growing accommodation of workers preferences.

A.5 The higher rates of part-time work in services than in industry apply to all European countries, and to men as well as women; see Table 16 (where the single diverging observation concerns men in Greece).

The facts that part-time workers hold jobs of lesser responsibility (Table 17), requiring less education (Table 18) and yielding lower pay (Table 19) seem fairly robust. In particular, they are verified across sectors or occupations.

A.6 Data on hours worked by women employees with regular part-time jobs (Table 20) reveal a high concentration (45 to 50 %) near the 20 hours mark and a very low concentration in the 30-34 hours range. The country data (not reproduced, but available from the same source) are homogeneous in that respect. This may be contrasted with the expressed preferences of Table 14. Interpreting the preference for 35 hours or more as a preference for full-time work, one would be left with more than 50 % of the part-time workers in the 30-34 hours range (20.6 out of 38.7 percent of the sample). It would seem that women eager to work 30 to 34 hours end up either working half time or working full time - probably due to lack of opportunities.

| | M E N | | | | | W O M E N | | | | | | |
|--------------|-------|------|------|------|------|-----------|------|------|------|------|------|------|
| | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 | 1973 | 1975 | 1977 | 1979 | 1981 | 1983 |
| Belgium | 1.0 | 1.0 | 1.2 | 1.0 | 1.3 | 2.0 | 10.2 | 13.0 | 16.7 | 16.5 | 16.3 | 19.7 |
| Denmark | - | 4.7 | 5.4 | 5.2 | 5.6 | 6.6 | - | 45.2 | 46.3 | 46.3 | 46.5 | 44.7 |
| France | 2.6 | 3.0 | 3.1 | 2.5 | 2.3 | 2.5 | 14.7 | 16.7 | 17.8 | 17.0 | 17.4 | 20.0 |
| Germany | 1.8 | 1.9 | 1.8 | 1.5 | 1.6 | 1.7 | 24.4 | 26.7 | 28.3 | 27.6 | 28.9 | 30.0 |
| Ireland | - | 2.6 | 2.7 | 2.1 | - | 2.7 | - | 16.9 | 18.9 | 13.0 | - | 15.6 |
| Italy | 3.7 | 3.4 | 3.3 | 3.0 | 2.9 | 2.4 | 14.0 | 12.7 | 11.9 | 10.6 | 10.1 | 9.4 |
| Luxemburg | 1.3 | 1.3 | 1.3 | 1.0 | - | 1.2 | 19.4 | 17.6 | 14.4 | 18.1 | - | 18.0 |
| Netherlands* | 2.4 | 2.4 | 2.5 | 2.8 | 9.7 | 6.9 | 26.3 | 28.8 | 28.3 | 31.6 | 49.0 | 50.3 |
| U.K. | 2.3 | 2.3 | 2.3 | 1.9 | 3.1 | 3.3 | 39.2 | 41.0 | 40.8 | 39.0 | 40.0 | 42.1 |
| Europe 9 | - | 2.6 | 2.6 | 2.2 | 2.8 | 2.8 | - | 26.0 | 26.4 | 25.6 | 26.7 | 27.6 |

TABLE 7. Proportion of employees working part-time, by sex
(% of total employment, same sex, regular and casual jobs)

Source : Eurostat, "Labour Force Sample Survey", *Emploi et Chômage*, 2, 1985

*In the Netherlands, a change in definitions occurred between 1979 and 1981.

| | 1972 | 1975 | 1977 | 1979 | 1981 | 1983 |
|--------------|------|------|------|------|------|------|
| Belgium | 82.4 | 85.1 | 87.0 | 89.3 | 85.8 | 84.0 |
| Denmark | - | 86.8 | 85.4 | 86.9 | 86.9 | 84.7 |
| France | 77.9 | 78.0 | 78.8 | 82.0 | 83.3 | 84.6 |
| Germany | 89.0 | 89.6 | 90.5 | 91.6 | 91.9 | 91.9 |
| Ireland | - | 71.4 | 73.7 | 71.2 | - | 70.7 |
| Italy | 58.3 | 58.7 | 61.3 | 61.4 | 61.4 | 64.8 |
| Luxemburg | 83.3 | 85.7 | 83.3 | 87.5 | - | 80.0 |
| Netherlands* | 80.2 | 81.4 | 81.1 | 82.5 | 69.4 | 78.3 |
| U.K. | 90.9 | 91.5 | 91.9 | 92.8 | 89.6 | 89.6 |
| Europe 9 | - | 84.7 | 85.3 | 86.8 | 84.8 | 85.7 |

TABLE 8. *Proportion of women among part-time employees*

Source : Eurostat, "Labour Force Sample Surveys", *Emploi et Chômage*, 2, 1985.

*In the Netherlands, a change in the definitions occurred between 1979 and 1981.

| | M E N | | | | W O M E N | | | |
|-------------|-------|-------|-------|-------|-----------|-------|-------|-------|
| | 14-24 | 25-49 | 50-64 | 65 up | 14-24 | 25-49 | 50-64 | 65 up |
| Belgium | 3.8 | 1.4 | 1.9 | 18.8 | 14.7 | 20.4 | 23.2 | 37.5 |
| Denmark | 20.2 | 2.7 | 4.8 | 20.5 | 30.2 | 44.5 | 54.4 | 46.5 |
| France | 4.5 | 1.4 | 3.0 | 37.6 | 14.4 | 19.6 | 25.2 | 39.2 |
| Germany | 1.5 | 0.9 | 1.6 | 39.4 | 6.0 | 36.7 | 36.5 | 55.7 |
| Greece | 6.7 | 2.4 | 3.3 | 16.7 | 10.1 | 10.9 | 13.0 | 51.4 |
| Ireland | 5.8 | 1.6 | 2.6 | - | 6.9 | 19.4 | 27.3 | - |
| Italy | 3.7 | 1.1 | 3.1 | 25.3 | 7.8 | 29.8 | 13.1 | 29.9 |
| Luxemburg | - | - | - | - | 6.7 | 22.2 | 20.0 | - |
| Netherlands | 11.0 | 5.3 | 7.5 | 46.4 | 22.0 | 59.9 | 66.1 | 55.6 |
| U.K. | 6.0 | 1.0 | 2.6 | 57.9 | 15.9 | 47.1 | 51.1 | 74.5 |
| Europe 10 | 4.6 | 1.4 | 2.8 | 35.8 | 12.1 | 29.8 | 34.8 | |

TABLE 9. *Proportion of employees working part-time, by sex and age, 1983.*

Source : Eurostat, *Emploi et Chômage*, 2, 1985.

| | Gross Participation Rate | Proportion of Part-time Employees | Adjusted Participation Rate | Unemployment Rate |
|--|--------------------------------|---|-----------------------------------|----------------------|
| | (1) | (2) | (3) | (4) |
| Belgium | 25.7 | 16.7 | 23.3 | 10.9 |
| Denmark | 38.2 | 46.3 | 28.6 | 8.9 |
| France | 33.0 | 17.8 | 29.9 | 6.1 |
| Germany | 29.5 | 28.3 | 25.2 | 3.8 |
| Ireland | 18.6 | 18.9 | 16.7 | 7.4 |
| Italy | 19.9 | 11.9 | 18.7 | 7.0 |
| Luxemburg | 22.4 | 14.4 | 20.8 | 1.5 |
| Netherlands | 17.6 | 28.3 | 15.0 | 3.3 |
| U.K. | 34.7 | 40.8 | 27.3 | 4.4 |
| Europe 9 | 28.5 | 26.4 | 24.5 | 5.3 |
| Mean Absolute Deviation (Unweighted) | 6.63 | 10.04 | 4.55 | |

TABLE 10. Adjusted labour-force participation rates, women, 1977

Definition $(3) = (1) \left[1 - .5 (2) \left\{ 1 + \frac{(4)}{100} \right\} \right]$

Source : Eurostat, "Labour Force Sample Survey", *Emploi et Chômage*, 2, 1985.

| | S I N G L E | | | | | M A R R I E D | | | | | O T H E R | | | | |
|-------------|-------------|-------|-------|-------|-------|---------------|-------|-------|-------|-------|-----------|-------|--------|-------|-------|
| | 14-24 | 25-49 | 50-64 | 65 up | Total | 14-24 | 25-49 | 50-64 | 65 up | Total | 14-24 | 25-49 | 50-64 | 65 up | Total |
| Belgium | 27.6 | 81.3 | 45.7 | - | 33.8 | 76.1 | 56.5 | 17.8 | (1.1) | 40.1 | (68.6) | 67.9 | 17.3 | (0.7) | 16.3 |
| Denmark | 54.6 | 88.0 | 53.6 | - | 59.1 | 86.8 | 85.6 | 51.5 | 5.9 | 65.0 | - | 89.0 | 46.1 | (1.7) | 32.8 |
| France | 38.4 | 87.0 | 58.4 | 5.1 | 48.3 | 67.1 | 63.8 | 36.8 | 2.0 | 49.7 | 76.8 | 85.0 | 41.8 | 1.5 | 26.5 |
| Germany | 44.8 | 85.1 | 58.2 | 4.6 | 49.6 | 58.6 | 53.3 | 31.2 | 3.4 | 42.1 | 69.5 | 77.8 | 33.4 | 2.1 | 21.8 |
| Greece | 34.8 | 74.4 | 32.3 | - | 41.7 | 29.2 | 41.0 | 31.4 | 12.6 | 34.5 | - | 63.7 | 23.5 | 3.8 | 14.9 |
| Ireland | 50.3 | 85.5 | 52.0 | (8.5) | 53.5 | 46.8 | 28.9 | 17.1 | - | 24.7 | - | 50.3 | 24.7 | (3.6) | 13.2 |
| Italy | 38.8 | 75.0 | 36.8 | 3.6 | 42.7 | 43.9 | 43.7 | 19.1 | 2.7 | 32.4 | (42.4) | 72.6 | 19.5 | 1.4 | 13.2 |
| Luxembourg | 47.3 | 87.0 | 51.2 | - | 51.7 | 58.8 | 36.4 | 13.3 | - | 28.3 | - | 72.8 | (19.2) | - | 18.7 |
| Netherlands | 40.5 | 84.3 | 47.5 | - | 47.1 | 62.5 | 39.9 | 16.5 | (1.0) | 31.4 | (46.2) | 49.4 | 15.8 | (0.8) | 15.2 |
| U.K. | 53.0 | 83.2 | 47.2 | 3.5 | 52.6 | 54.3 | 60.9 | 45.2 | 3.8 | 49.0 | 35.9 | 65.7 | 38.6 | 2.8 | 20.0 |
| Europe 10 | 43.1 | 82.5 | 48.8 | 4.1 | 47.8 | 56.6 | 53.9 | 31.4 | 3.3 | 42.2 | 59.0 | 74.5 | 32.2 | 2.0 | 20.4 |

TABLE 11. Labour-force participation rates by marital status and age, women, 1983

Source : Eurostat, *Emploi et Chômage*, 2, 1985.

Figures in parentheses are based on small cells.

| Age | Married | Unmarried |
|-------|---------|-----------|
| 14-19 | 17.2 | 4.1 |
| 20-24 | 19.3 | 4.3 |
| 25-34 | 51.5 | 14.9 |
| 35-44 | 57.5 | 20.7 |
| 45-54 | 48.0 | 21.5 |
| 55-59 | 49.4 | 33.3 |
| 60-64 | 64.7 | 50.0 |
| 65 up | 80.2 | 70.5 |
| Total | 50.2 | 21.1 |

TABLE 12. *Proportion of employees working part-time, by marital status and age, U.K., 1977, women.*

Source : J.P. Jallade (ed.), *L'Europe à temps partiel*, Paris, Economica, 1982, p. 132.

| Age of Youngest Child | Married | Unmarried |
|-----------------------|---------|-----------|
| 0-4 | 78 | 49 |
| 5-9 | 70 | 52 |
| 10-15 | 56 | 35 |
| 16 up | 52 | 34 |
| no dependent child | 31 | 6 |

TABLE 13. *Proportion of women aged 16-59 working part-time, by marital status and age of youngest child, U.K., 1977.*

Source : J.P. Jallade (ed.), *L'Europe à temps partiel*, Paris, Economica, 1982, p. 149.

| Preferred length of working week, hours | Men | Women |
|---|-------|-------|
| less than 20 | 0.9 | 1.3 |
| 20-24 | 1.2 | 9.3 |
| 25-29 | 1.7 | 7.5 |
| 30-34 | 10.1 | 20.6 |
| 35-39 | 47.3 | 37.7 |
| 40 up | 38.8 | 23.6 |
| | 100.0 | 100.0 |

TABLE 14. Preferences about working hours expressed by sample survey respondents, Germany, 1978.

Source : J.P. Jallade (ed.), *L'Europe à temps partiel*, Paris, Economica, 1982, p. 76.

| Average proportion of active women working part-time | | Economywide 38 sectors | Industry 23 sectors | Services 14 sectors |
|--|------|---------------------------|------------------------|------------------------|
| unweighted | 1975 | .107 | .077 | .144 |
| | 1980 | .120 | .093 | .152 |
| | 1983 | .140 | .104 | .184 |
| weighted by current employment | 1975 | .154 | .078 | .163 |
| | 1980 | .162 | .086 | .173 |
| | 1983 | .200 | .113 | .209 |
| weighted by 1975 employment | 1980 | .161 | .081 | .174 |
| | 1983 | .197 | .107 | .209 |
| weighted by 1980 employment | 1983 | .198 | .112 | .208 |
| standard deviation of sectoral proportions | 1975 | .067 | .057 | .039 |
| | 1980 | .079 | .082 | .043 |
| | 1983 | .076 | .064 | .042 |

TABLE 15. Role of sectoral distribution in growth of part-time work, France, 1975-1983

Source : Calculations based on INSEE, Enquêtes sur l'Emploi.

| | M E N | | | W O M E N | | |
|-------------|----------|----------|--------|-----------|----------|--------|
| | Industry | Services | Total* | Industry | Services | Total* |
| Belgium | 1.0 | 2.7 | 2.0 | 9.0 | 22.3 | 19.7 |
| Denmark | 3.5 | 9.0 | 6.6 | 33.3 | 47.5 | 44.7 |
| France | 1.2 | 3.1 | 2.5 | 11.3 | 20.9 | 20.0 |
| Germany | 0.7 | 2.0 | 1.7 | 6.2 | 31.9 | 30.0 |
| Greece | 4.4 | 2.1 | 3.7 | 8.4 | 12.1 | 12.1 |
| Ireland | 1.8 | 3.0 | 2.7 | 7.5 | 14.6 | 15.6 |
| Italy | 1.4 | 1.8 | 2.4 | 6.0 | 8.0 | 9.4 |
| Luxemburg | - | (1.2) | (1.2) | (12.1) | 17.5 | 18.0 |
| Netherlands | 3.0 | 9.5 | 6.9 | 38.9 | 51.3 | 50.3 |
| U.K. | 1.3 | 5.1 | 3.3 | 26.1 | 46.0 | 42.1 |
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Europe 10 | 1.3 | 3.4 | 2.8 | 18.0 | 30.3 | 27.6 |

TABLE 16. Percentage of part-time employed persons among all employed persons, by sex and sector, 1983.

Source : Eurostat, *Emploi et Chômage*, 2, 1985.

*Includes Agriculture

| | JOB QUALIFICATION | | | Total |
|--|-------------------|------|------|-------|
| | I | II | III | |
| Industry | | | | |
| Full-time workers | 6.5 | 41.8 | 51.5 | 100 |
| Part-time workers | 5.6 | 38.5 | 55.8 | 100 |
| Total | 6.3 | 41.2 | 52.3 | 100 |
| Services (Trade, Banks and Insurance) | | | | |
| Full-time workers | 11.9 | 20.7 | 67.3 | 100 |
| Part-time workers | 5.3 | 12.5 | 82.0 | 100 |
| Total | 8.1 | 15.9 | 75.7 | 100 |

*TABLE 17. Distribution of blue-collar women
by job qualification, Germany, 1978*

Source : J.P. Jallade (ed.), *L'Europe à temps partiel*, Paris, Economica, 1982, p. 120.

Job qualification

- I Highly specialised jobs with genuine responsibility
- II Skilled worker jobs
- III Unskilled worker jobs

| Educational group : Highest degree received | Percentage of women in given educational group working | | Percentage of given educa- tional group among all women working | |
|---|--|-------------|---|-------------|
| | full-time | part-time | full-time | part-time |
| University | 81.7 | 18.3 | 4.5 | 1.5 |
| Non-University higher education | 70.0 | 30.0 | 10.7 | 6.9 |
| High School : | | | | |
| complete | 82.8 | 17.2 | 4.1 | 1.3 |
| incomplete | 69.2 | 30.8 | 15.3 | 10.2 |
| 2 years | 62.7 | 37.3 | 12.6 | 11.3 |
| No degree | <u>53.5</u> | <u>46.5</u> | <u>52.8</u> | <u>68.8</u> |
| Total | 60.0 | 40.0 | 100 | 100 |

*TABLE 18. Distribution of female employees
by education, U.K., 1978*

Source : J.P. Jallade (ed.), *L'Europe à temps partiel*, Paris, Economica, 1982, p. 142.

| | Average weekly hours | | Average hourly earnings (£) | | |
|------------------------------|----------------------|-----------|-----------------------------|-----------|-------|
| | full-time | part-time | full-time | part-time | Ratio |
| Food and Beverages | 38.1 | 21.7 | 1.21 | 1.08 | .89 |
| Electrical Appliances | 38.5 | 22.4 | 1.23 | 1.17 | .96 |
| Textiles | 38.3 | 22.8 | 1.08 | 1.02 | .94 |
| Garments - Shoes | 37.9 | 24.8 | 1.02 | 0.98 | .96 |
| Transport - Communication | 37.2 | 21.1 | 1.45 | 1.16 | .80 |
| Retail Trade | 37.9 | 20.9 | 1.03 | 0.91 | .88 |
| Banks - Insurance | 35.4 | 20.0 | 1.38 | 1.13 | .82 |
| Professional services | 35.3 | 19.5 | 1.66 | 1.21 | .73 |
| Other services | 37.9 | 20.8 | 1.17 | 0.98 | .84 |
| Public servants | 37.0 | 19.8 | 1.47 | 1.19 | .81 |
| Total | 36.8 | 20.4 | 1.37 | 1.09 | .80 |
| Whole economy | 36.9 | 20.6 | 1.34 | 1.09 | .81 |

*TABLE 19. Earnings of female employees,
U.K., 1977*

Source : J.P. Jallade (ed.), *L'Europe à temps partiel*, Paris, Economica, 1982, p. 139

| | Industry | Services |
|-------|----------|----------|
| 0 | 6.7 | 7.1 |
| 1-14 | 12.5 | 23.1 |
| 15-19 | 36.7 | 35.0 |
| 20-24 | 11.9 | 11.6 |
| 25-29 | 23.2 | 16.6 |
| 30-34 | 3.7 | 2.6 |
| 35 up | 5.3 | 4.0 |
| | 100.0 | 100.0 |

TABLE 20. *Distribution of hours worked by women employees with regular part-time jobs, Europe 9, 1981.*

Source : Eurostat, "Labour Force Sample Survey", *Emploi et Chômage*, 2, 1985.

FOOTNOTES

- ¹ It may also help those familiar with my earlier work in this area to assess quickly how my thinking has evolved; see Drèze and Modigliani (1981), Drèze (1979, 1980).
- ² Chapters 2 and 3 of Okun (1981) also provide an excellent background reference for the whole paper.
- ³ The standard reference on "firm-specific human capital" is Becker (1964); see also Hart (1984 b).
- ⁴ There are of course offsetting disadvantages, including those implied by the first part of Section 2.3.
- ⁵ See also Hart (1984 b), or Holt et al. (1960) for an early application at the firm level.
- ⁶ See Section 4.1 below.
- ⁷ See also the Appendix.
- ⁸ See Philips (1978).
- ⁹ These remarks apply to new contracts. Reducing severance rights of employed workers is not apt to promote their employment.
- ¹⁰ Violation of this condition is a major drawback of the otherwise attractive profit-sharing scheme advocated by Weitzman (1984). Firm-specific risks should not matter to holders of diversified portfolios. That argument does not apply to privately owned firms, however.
- ¹¹ This statement applies to new hirings; the retention rate of workers under contract will be enhanced by wage cuts in firms facing bankruptcy; again, these firms can be numerous in a deep recession - see for instance Drèze and Sneessens (1985).
- ¹² That seniority bonuses are more significant for white collars than for blue collars is consistent with this observation.
- ¹³ See however Abowd and Ashenfelter (1981).
- ¹⁴ See however the sample information about Belgian and French firms mentioned in Section 9.2.

- ¹⁵ Sections 4.3 and 4.4 reflect work in (slow) progress on "Labour contracts with overlapping generations".
- ¹⁶ Some known private labour contracts stipulate that the more senior workers are laid off last, whereas other such contracts stipulate that they are laid off first - see Feldstein (1976).
- ¹⁷ Another problem arising with this forward contracting is the difficulty for the firm of collecting an insurance premium before the contingency.
- ¹⁸ Let $s(w)$ and $d(w)$ denote respectively the supply and the demand for new contracts at the wage level w . Assume that, when demand exceeds supply, the probability of finding a job is well approximate by $\frac{s(w)}{d(w)}$. The expected utility of a worker is then

$$EU = \frac{s(w)}{d(w)} u^e(w) + [1 - \frac{s(w)}{d(w)}] u^u = \frac{s(w)}{d(w)} [u^e(w) - u^u] + u^u,$$

where $u^e(w)$ and u^u denote the utility level if employed and if unemployed respectively. Then, denoting derivatives by subscripts:

$$\begin{aligned} \frac{\partial EU}{\partial w} &= \frac{s_w d - s d_w}{d^2} [u^e(w) - u^u] + \frac{s}{d} u_w^e \\ &= \frac{s}{d} \left\{ \left(\frac{s_w}{s} - \frac{d_w}{d} \right) [u^e(w) - u^u] + u_w^e \right\} \\ &= \frac{s}{d} \left\{ (\eta_{s,w} - \eta_{d,w}) \frac{u^e(w) - u^u}{w} + u_w^e \right\} \\ &> 0 \text{ if and only } \frac{u^e(w) - u^u}{u_w^e} < \frac{w}{\eta_{d,w} - \eta_{s,w}}, \end{aligned}$$

a condition that will hold whenever $\frac{u^e(w) - u^u}{u_w^e}$ is small enough.

- ¹⁹ The most fashionable of these drawbacks, namely the negative impact on job search, is of little consequence during a deep recession, when employment is only very weakly linked to labour supply. The possible impact on wages is a more serious matter.
- ²⁰ In the case of new entrants into the labour force, or workers dismissed from bankrupt or closed-down firms, there is no scope for charging part of the cost to the employer, for instance through experience-rated contributions.

- ²¹ Could such trading be organised through markets? In exceptional cases, something resembling a private market for individual jobs exists; but closer scrutiny reveals that the "jobs" in question are in the nature of independent practice or casual jobs, and lack the dimension of a lasting employment relationship. For regular jobs, the presence of a third party, the employer, complicates the trading: the employer must accept (recruit) the "buyer" of a job; and if jobs in a firm had positive market values, this might provide incentives for the firm to reduce wages and capture the "rent". I am not aware of serious work on this topic. It should also be realised that our complex social legislation does not facilitate market trading of individual jobs. Would a seller be eligible for unemployment compensation? Would a buyer inherit the seniority rights of the seller? Basically, social security rights are not transferable.
- ²² The relevant preferences concern the trade-off between the age of retirement and the level of the pension, for instance.
- ²³ According to a survey conducted in France in 1980, 50 % of the workers would have retired at age 60 instead of 65, if offered the same retirement income. In the Netherlands, when older teachers were given the option of reduced working time in pre-retirement years, 90 % of those eligible took advantage of the scheme.
- ²⁴ In a sample of 34 firms surveyed in 1984 by a Commission of the French Planning Office, 27 firms had adopted some form of work sharing or of working time reduction, but only one case of progressive (part-time) retirement was mentioned; see Commissariat Général du plan (1985).
- ²⁵ OECD (1985 p. 201), quoting Douglas (1934).
- ²⁶ Collecting microdata on employment changes in individual firms and analysing these should be both feasible and instructive.
- ²⁷ They are discussed at greater length in Drèze (1980), where an attempt is also made at quantifying their implications.
- ²⁸ Rosen (1985, Section V) outlines a simple model of "returns to hours" in a contracts framework, where firms use overtime in good states, layoffs with constant hours in bad states.
- ²⁹ The proposal also called for "wage moderation".
- ³⁰ Hart (1984), p. 80.
- ³¹ Quatrième Congrès des Economistes Belges de langue française (1980) and Commissariat Général du Plan (1985).

- ³² Firms operating on a continuous basis typically operate 5 (sometimes even 6) shifts of variable size.
- ³³ Cfr. e.g. Palasthy (1978), Van den Broeck et al. (1984).
- ³⁴ I know of one industrial firm which has adopted the scheme a few years ago to expand capacity by 35 % without new investment or multiple shifts; and one savings bank which has adopted the scheme to impose team work on its staff.
- ³⁵ The percentage of active women working part time in that year was 17.5 %. Baroin asserts that this number could increase by 70 % (or 12 %) due to full time workers switching to part-time work, and by 50 % (or 9 %) due to inactive women working part time. This would result in 38.5 out of 109 active women working part time, i.e. 35 % or twice the initial rate of 17.5 % .
- ³⁶ After completing this draft, I read a paper by A. Lindbeck and D.J. Snower, "Explanations of Unemployment", *Oxford Review of Economic Policy*, 1, 2, 1985, 34-59, which gives a summary account of "Insider-Outsider" theories of unemployment, as developed in several unpublished papers by the same authors. That work seems to be directly relevant to the contents of Sections 4.3-4.4 of the present paper.

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