SWEDISH ECONOMIC POLICY REVIEW 1 (1994) 185–214

Technical Development, Competition from Low-Wage Economies and Low-Skilled Unemployment

Jacques H. Drèze* and Henri Sneessens**

Summary

■ The market position of less-educated workers is weak and deteriorating, due in particular to technological development and growing competition from low-wage economies. In continental Europe, the resistance of relative wages of less-skilled workers has been an aggravating factor. Is it possible to reconcile labour costs low enough to promote full employment with reasonable incomes for low-skilled workers and proper incentives for economic efficiency?

Constructive measures start with practical education and training, then go on to promote the demand and institutionalised supply of proximity services. Reliance on the price mechanism points towards measures reducing or eliminating the wedge between labour costs to employers and net marginal earnings of employees. A basic policy choice must be made between two avenues: minimum wages, unemployment benefits and employment subsidies concentrated on the low end of the wage scale; or flexible wages, no durable unemployment benefits, but a "participation income" issued on an individual basis to all adult members of the labour force.

Reductions or exemptions of employers' contributions to social security constitute a natural first step. Such measures appear indispensable to the sustainability of free trade between countries with highly dissimilar levels of social protection. ■

* *The author is Professor at Université Catholique de Louvain.* ** *The author is Professor at IRES, Université Catholique de Louvain and Université Catholique de Lille. Both authors have a longstanding interest in the theoretical and econometric analysis of unemployment, and in macroeconomic policies.*

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The economic position of the less-skilled members of the work force has deteriorated over the past twenty years, both in Western Europe and in the United States. In Europe, the deterioration manifests itself primarily through higher unemployment. In the US, it manifests itself mainly through lower real and relative wages. The phenomenon has a cyclical aspect, associated with slow growth and recessions. There is, however, also mounting evidence of a structural trend, associated with technological development and competition from low-wage economies – a trend that is apt to gain rather than lose momentum over the coming years. The combination of uncertain growth perspectives and a lasting structural weakness exacerbates the conflict between equity and efficiency: how can we promote full employment without producing unsustainable income inequalities?

This paper surveys some of the evidence and arguments. The first part reviews briefly the *current situation*, the weight of the evidence behind proposed explanations, and the theoretical case for international wage convergence. A second part discusses *policy objectives* and brings out the efficiency/equity dimension of the problem. A third part evaluates some *policy alternatives* and draws conclusions.

1. The weakened position of less-skilled workers

1.1 High unemployment and low wages

The simplest and most objective measure of skills is educational attainment. Table 1 records unemployment rates for five levels of education in nineteen OECD countries in 1989. In every single country there is a marked decline in unemployment as education rises. For workers with lower-secondary education, unemployment is thirty-three percent above

Table 1. Unemployment rates by level of educational attainment[a]

Country	Pre-primary and primary	Lower secondary	Upper secondary	Higher education non-university	Higher education university	Total
United States	8.5	9.1	4.6	3.3	2.2	4.4
Japan	–	7.0	6.5	7.7	2.3	4.4
Germany	–	13.8	6.8	3.7	4.5	7.3
France	11.8	10.5	6.6	3.4	3.0	8.1
Italy	5.9	6.8	7.7	–	4.8	6.6
United Kingdom	–	10.0	5.6	2.7	2.4	6.4
Canada	10.3	9.8	6.8	5.0	3.6	6.7
Australia	8.1	7.0	4.2	4.6	3.7	5.4
Austria	–	3.6	2.4	–	1.1	2.7
Belgium	14.0	9.2	4.7	2.7	2.0	7.5
Denmark	–	12.1	7.1	4.0	3.4	8.3
Finland	–	4.1	3.1	1.6	1.7	3.0
Ireland	25.8	15.1	6.6	3.9	2.6	13.9
Netherlands	13.6	7.6	4.8	4.6	5.0	6.5
New Zealand	9.3	4.7	4.9	5.1	2.9	6.0
Portugal	6.0	5.8	6.4	6.0	6.1	6.0
Spain	12.7	15.6	13.1	–	10.7	12.9
Sweden	–	1.4	0.9	0.9	1.0	1.0
Switzerland	–	1.4	0.6	0.3	0.8	0.8
Simple average of above countries	10.9	8.4	5.7	3.9	3.4	6.3

[a]Adult population aged 25–64 in 1989, except Japan (1987), Denmark (1988), New Zealand (1990) and Netherlands (1990).

Source: CERC (1991)

average, but two-and-a-half times as high as for workers with post-secondary education. Although comparative data are lacking, country studies confirm that unemployed workers are less educated than employed workers, and that a high proportion of unemployed workers have a low level of education (EC 1992, p.34). A study by OECD (1989), covering seven countries with comparable data, also found that the increase of unemployment between the early 1970s and late 1980s had generally been more pronounced for the least educated workers.

Education is not a perfect indicator of skills valued on the labour market.[1] We are not aware of a better proxy, however. In particular, we do

[1] For instance, a recent paper by Hammermesh and Biddle (1993), based on North-American data for 1971–81, reports that "holding demographic and labour market characteristics constant, ... plain people earn less than people of average looks, who earn less than the good looking. Further, the penalty for plainness is slightly larger than the premium for beauty. The effects also are slightly larger for men than for women".

Table 2. Unemployment rates by skill in Britain and USA

	Britain (1984)	USA (1987)
Professional and managerial	5.3	2.3
Clerical	8.0	4.3
Other non-manual	12.2	4.3
Skilled manual	12.6	6.1
Personal services	15.5	7.7
Other manual	15.5	9.4
All	10.8	6.2

Source: Layard *et al.* (1991)

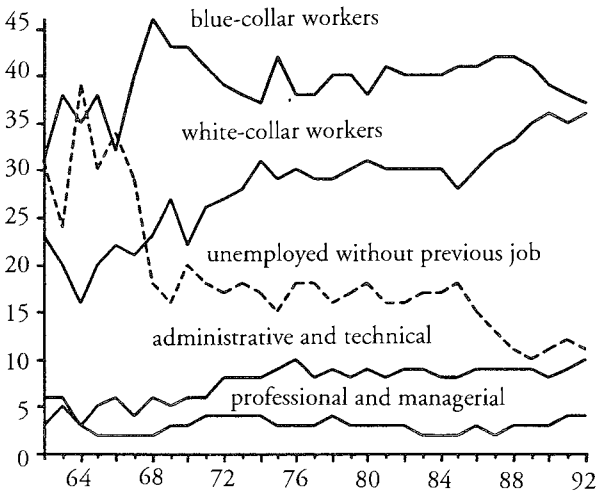
not know whether skill differences *within professional categories* are more significant than skill differences *between* these categories. The data for Britain and the US in Table 2, borrowed from Layard *et al.* (1991),[2] reveal that professional differences in unemployment rates are comparable to educational differences (as given in Table 1) in the US, and exceed these in the UK.

As for evolutions over time, Figures 1 and 2, pertaining to France, reveal much stability in the professional *distribution* of unemployment. But the general progress in education implies a declining proportion of less-educated workers in the labour force. Accordingly, the stable proportion of the less educated among the unemployed means a growing disparity between their fast-growing unemployment rate and the average rate (see Figure 2). This evolution implies clearly that *employment prospects* for the unskilled have deteriorated, both absolutely and relative to the prospects for the skilled. From a normative (policy) viewpoint, it is clearly desirable on efficiency grounds to reduce overall (inefficient) unemployment. When distributive considerations suggest a special concern for the least favored, they also give priority to reducing the *higher* unemployment rates. From a positive (theory) viewpoint, it is not clear whether the observed evolution also implies an increase in "skill mismatch" (mismatch between the skill composition of labour demand and supply). Different *theoretical* models suggest different measures of skill mismatch.[3]

[2] There are only two tables in that magnum opus involving educational or professional differences – but the significance of Table 2 is highlighted by the fact that it is printed three times (pp. 45, 290, 330). Although the data in Tables 1 and 2 do not cover identical years, they sustain unambiguously the comments in the text.

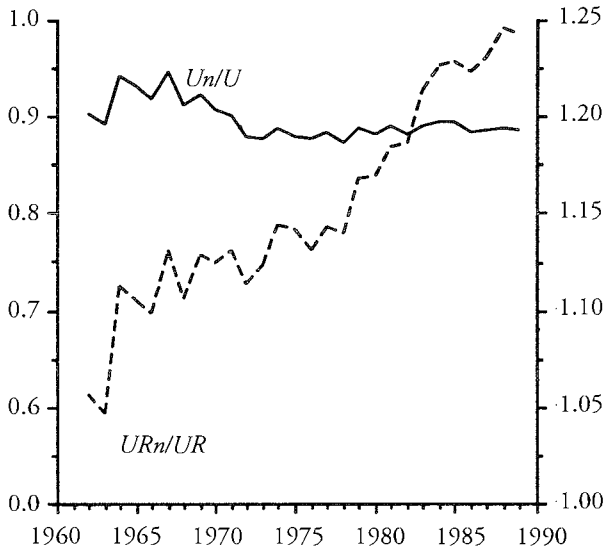
[3] Thus, Layard *et al.* (1991) would interpret the unchanged *distribution* as unchanged mismatch. Sneessens and Shadman-Mehta (1994) interpret the growing *disparity* as growing mismatch. The former authors start from a Cobb-Douglas matching function; the latter authors derive a CES employment function, by explicit aggregation over quantity-constrained firms.

Figure 1. Structure of unemployment by occupation in France
Percent of total unemployment



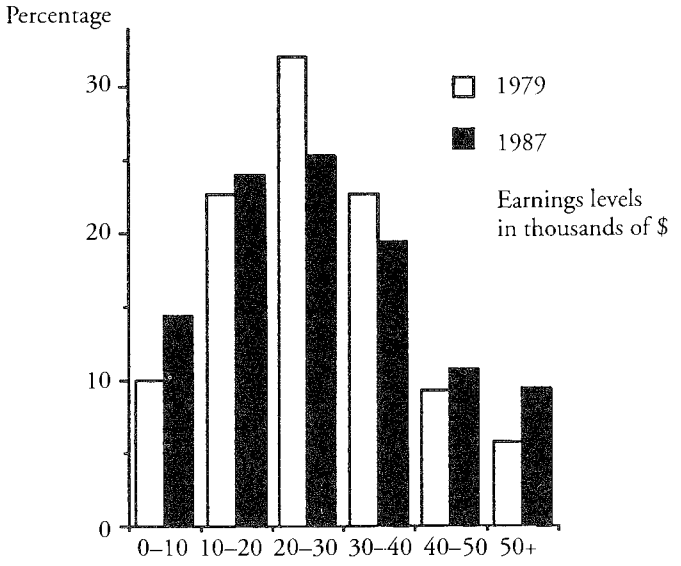
Source: Maillard and Sneessens (1993)

Figure 2. Low-skilled unemployment in France in levels (*Un/U*) and in rates (*URn/UR*) respectively
Proportions of total unemployment



Source: Maillard and Sneessens (1993)

Figure 3. 25–54-year old working men by wage and salary income 1979 (white column) and 1987 (black column)



Source: Levy and Murnane (1992)

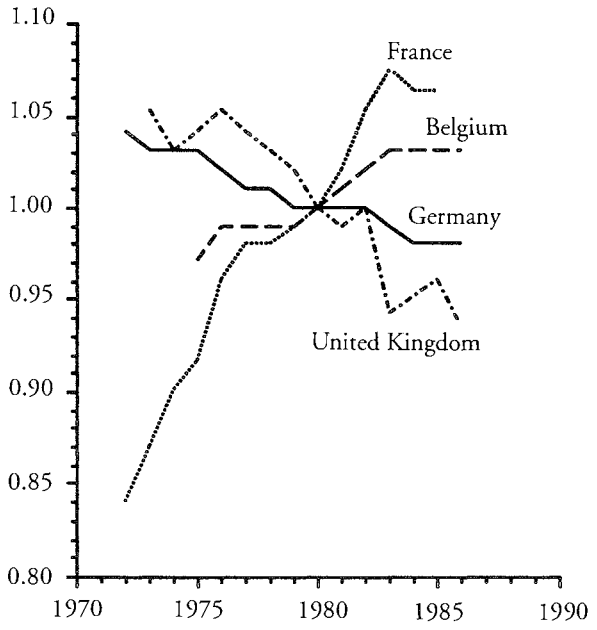
In the US, a reduced labour demand bears more on wages than on unemployment in the medium run. The weakened position of less-skilled workers is illustrated by Figure 3, which plots real wage distributions for adult men in 1979 and 1987, two years with identical median wages.[4] The proportion earning less than US $ 20 000 rose from 32 percent to 38 percent between the two years.

Have the wages of less-skilled workers declined, relative to those of more skilled workers, in Western Europe? The answer may differ across countries, as Figure 4 illustrates. The figure reproduces the evolution of the manual vs non-manual relative wage. The data for the UK, though not directly comparable, seem closer to the US experience: "Over the 1980s, the low paid have fallen systematically further behind average earnings." (Atkinson, 1993, p. 9).[5] At the other extreme, one finds the case of France, where the relative wage of less-skilled workers has substantially increased (see also Sneessens and Shadman-Mehta, 1994). Germany seems to be an intermediate case, with a moderately decreasing relative

[4] US $ 27 778 and 27 898, respectively, at 1988 prices.

[5] See also Atkinson (1993b) for a detailed documentation of increased income inequality in the UK since the mid-1970s.

Figure 4. Relative wage cost of manual versus non-manual workers
1980=1



Source: Eurostat

wage. One should, however, be careful when using the manual vs non-manual relative wage as a measure of the less-skilled relative wage. A closer look at German data (see Table 3) suggests the opposite, i.e., a slight *increase* in the relative wages of the unskilled, both *within* the blue-collar and *within* the while-collar group. This happened in spite of a marked decline in the proportion of unskilled jobs within both groups, and of the rise in unskilled unemployment.

Table 3. Ratio unskilled/skilled employment and wages in Germany

	Ratio unskilled/skilled employment		Ratio unskilled/skilled wage rate	
	Blue collar	White collar	Blue collar	White collar
1966	1.34	0.88	0.78	0.56
1970	1.42	0.75	0.78	0.57
1980	1.17	0.43	0.80	0.59
1990	1.02	0.38	0.82	0.58

Source: Maillard and Sneessens (1993)

1.2. Cyclical element

The arguments to the effect that cyclical unemployment affects the less-skilled workers more severely are well known (see e.g. Bean *et al.*, 1990). First and foremost comes the "ladder" effect. Skilled or educated workers who do not find jobs at their own level accept jobs below qualification, for which somehow they receive priority.[6] This aggravates the difficulties encountered by less-skilled workers: eventually, most of the unemployment becomes concentrated among unskilled workers, at the bottom of the ladder, where the possibility of work below qualification hardly exists.

The upgrading of labour qualifications during recessions was stressed for the US by Okun (1981). An element of indirect confirmation is found in the EC (1991) employment survey which shows that younger workers, hired after the rise of unemployment in the seventies, are more apt to work below qualification than their older colleagues.[7] The "ladder" effect stresses the employment consequences of wage rigidities at the low end of the wage scale – a feature to which we return below.

A second argument about cyclicality is related to labour hoarding. "Labour hoarding matters because it is likely that in the case of significant recruiting and training costs for skilled labour, firms will be more likely to choose to hoard skilled labour than unskilled labour during temporary downturns in activity" (Bean *et al.*, 1990).

1.3. Structural trend

The arguments in support of a structural shift in the skill composition of labour demand have been documented most systematically for the US. The wage differentials (as observed in the US) are more informative than unemployment differentials, because the former represent a quantitative measure and the latter only a qualitative one.

In the eighties the US has witnessed a substantial increase in the wage differentials associated with education (mostly the "college premium"), accompanied by an increase in the proportion of more educated workers. "The positive correlation of relative wages and quantity changes among

[6] It is reported by Bewley and Brainard (1993) that firms are reluctant to hire overqualified workers, whose morale will be low if there are no prospects for upgrading. Still, the superior ability of the more skilled or educated workers to find some job is seldom disputed.

[7] Unfortunately, no comparable data for a low unemployment period are available; one cannot exclude that work below qualification disappears with seniority, irrespective of the unemployment situation.

demographic groups in the 1980s strongly suggests that relative demand shifts ... are necessary to understand recent wage structure movements..." (Katz, 1992–93).

Three elements are invoked in explanation of the relative demand shifts.

(i) Skill-biased technical change, imputed to the spread of micro-computers and to the increased share of advanced technologies (high-tech) in the US capital stock.

(ii) The relative decline in the number of high-wage blue-collar jobs in industry, reflecting the relative stagnation of output, and sustained growth of productivity, in that sector ("deindustrialisation").

(iii) The increased competition from low-wage economies, interpretable as an increased implicit supply of less-educated workers ("outsourcing").

Quantitative assessment of the three effects and of their relative importance is difficult, and complicated by the need to allow for supply factors and for deviations from competitive wages. The first explanation is usually assigned the highest weight (to some extent by default), followed by the other two in that order. For the last effect, a weight of 15 percent is mentioned (Katz, 1992–3, p.13). We consider in more details the issues of skill-biased technical change and increased foreign competition.

1.4. Skill-biased technical change and factor substitution

The evidence of skill-biased technical change remains fairly limited and circumstancial. In the US, the starting observation is that skilled employment relative to unskilled employment has increased steadily after 1973. In the seventies, however, this increase was associated with a relative (as well as an absolute) real wage decrease, while in the eighties it was associated with a (relative) increase. If we assume full employment and perfect competition, this change must result from demand and/or supply shifts. The observed mix of employment and of real wage changes suggests that, at least in the eighties, the supply shift must have been accompanied by an even stronger demand shift.

Various studies, based on detailed micro-data bases, have tried to disentangle the various factors to be taken into account. The basic observation is that most of the wage premium for higher education accrues, *within* specif-

ic industries or sectors of the economy, as a reward for general, unexplained efficiency advantage (Bound and Johnson, 1992; Katz and Murphy, 1992). The identification of that advantage with technological development remains largely interpretative. Reference is made to studies reporting a *ceteris paribus* wage premium (17 percent in 1984 and 19 percent in 1989) for computer use (Krueger, 1993), as well as to a positive correlation between employment of highly educated workers and investment in computer technologies, intensive *R* & *D*, or high-tech capital intensity (Berman, Bound and Griliches, 1983; Berndt and Morrison, 1991). These illustrations are suggestive, but do not rule out alternative interpretations (e.g. in terms of product mixes within these industries). A more recent study (Entorf and Kramarz, 1994) on somewhat richer French data suggests that computer-based new technologies are used by abler workers, so that the wage premium obtained by the latter is not simply due to the fact that using new technologies increases their productivity.

Another source of information about demand for skills comes from the estimation of production functions. Bean and Pissarides (1990) constructed an econometric model with two kinds of labor (non-manual and manual), which they estimate sectoral data on British manufacturing over the period 1970–86. The authors obtain some evidence of non-neutral technological progress at the sectoral level, in favor of skilled labor. A similar finding is obtained on French data by Sneessens and Shadman-Mehta (1994). They distinguish two skill groups. A high-skill group consists of "professional and managerial workers", a lower-skill group includes all white-collar employees and blue-collar workers. The authors estimate a trend rate of substitution of the more skilled for less-skilled workers of some 4 to 5 percent per year before 1974 and 2 to 3 percent thereafter. That trend probably captures the three elements mentioned above to explain relative demand shifts. Such a trend is impressive, and it seems unlikely that the higher rate could have persisted. The decline after 1974, although at first glance contrary to the US evidence, is consistent with the lower rates of technological progress after 1974 found in many empirical studies in association with the slower growth of output and reduced investment rate (Drèze and Bean, 1990).

1.5. Foreign competition and factor price equalisation

International trade theory offers a direct argument in support of the claim that increased competition from low-wage economies should affect negatively the market position of low-skilled workers, resulting in lower

wages (or higher unemployment in case of downward wage rigidity). The argument comes from the factor-price equalisation theorems associated with the Heckscher–Ohlin model of trade.[8] These theorems state that, under certain conditions, *free trade in final* (e.g. consumer) *goods brings about international parity of factor prices* (e.g. wages).

The reasoning is straightforward. Assume that m goods are traded at competitive world prices p (a row vector), and produced through identical constant returns technologies, using m factors of production with input coefficients A (an $m \cdot m$ matrix). Let factor prices in country c be w_c. Equilibrium requires

$$p \leq w_c A \tag{1}$$

with equality in case of positive production. If country c produces the m goods, so that (1) holds with equality, and the matrix A has full rank, then (1) can be inverted to yield

$$w_c = pA^{-1}. \tag{2}$$

The factor prices are thus fully determined by the world prices of traded goods p, and should be identical in all countries producing the full set of these goods.

It is not easy to assess the relevance of the theorem, since the assumptions are relatively strict. On the one hand, it is clear that factor price equalisation forces are at work in world trade. In spite of numerous and significant departures from the theoretically sufficient conditions, competitive pressures on goods markets must entail *some* tendency towards wage convergence. On the other hand, prevailing departures from wage convergence are glaring and suggest that the pressures towards equalisation remain largely ineffective. In particular, the wage disparities displayed in Table 4 would seem to exceed by far what can be accounted for by tariffs, transportation and transaction costs, product differentiation, returns to scale and the like. At the same time, examples of relocation of activities to low-wage economies abound. It seems indeed hard to deny that low-skilled workers face increasing competition from low-wage economies, with negative implications for their wage and employment prospects. Of particular concern to Western European workers is the competition from Eastern Europe. The *ratio* of wage costs in the West and the

[8] Cf. Jones and Neary (1984), Ethier (1984) or Neary (1980) for surveys.

Table 4. Hourly wage costs for production workers in manufacturing, 1992

Country or area	Index US = 100	US Dollars
United States	100	16.17
Canada	105	17.02
Mexico	15	2.35
Australia	80	12.94
Hong Kong	24	3.89
Japan	100	16.16
Korea	30	4.93
New Zealand	49	7.91
Singapore	31	5.00
Taiwan	32	5.19
Belgium	136	22.01
Denmark	124	20.02
Finland	116	18.69
France	104	16.88
Germany	160	25.94
Ireland	82	13.32
Italy	120	19.41
Netherlands	128	20.72
Norway	143	23.20
Portugal	31	5.01
Spain	83	13.39
Sweden	150	24.23
Switzerland	144	23.26
United Kingdom	91	14.69
Trade-weighted measures		
All economies excluding the US	96	15.46
Europe	126	20.40
Asian NIE's[a]	30	4.84

[a]Asian newly industrialising economies (Hong Kong, Korea, Singapore and Taiwan).

Source: US Bureau of Labour Statistics, March 1993

East is alleged to exceed ten or sometimes even twenty.[9] Distances being what they are, it should not take very long for Eastern competition to spread across manufacturing and many services.

That increased competition from low-wage economies affects primarily the less-skilled workers in Europe and the US is the commonly accepted premise – confirmed to some crude extent by the analysis of US data.

[9] The data in Table 4 are not available for Eastern Europe. However, Plan Econ Inc. in Washington publishes data for net monthly wages which, in 1992, stood well below US $ 100 for Romania and Bulgaria, below $ 150 for the Czech Republic and Slovakia and below US $ 200 for Hungary and Poland.

But the confirmation remains crude. More detailed evidence, for specific skill groups, would be valuable.

2. Policy objectives

What conclusions should be drawn from the overview above? First, the position of less-educated workers is undoubtedly weak on today's labour markets, both in the US and in Europe. Second, that position is weaker today than 10–20 years ago, due to a combination of cyclical and structural forces. Third, there is a presumption that technological development and competition from low-wage economies have contributed to that deterioration. Fourth, in continental Europe, the resistance of relative wages of less-skilled workers has been an aggravating factor. Fifth, the competition from low-wage economies, including in particular Eastern Europe, is still far from having exerted its full effects. Sixth, the fragility of our knowledge on all these counts is both a cause of embarrassment and an invitation to prudence.

2.1. Jobs versus income

The situation thus summarized creates a difficult policy problem. Jobs and income are two dimensions of well-being. In much economic theorising, worker preferences are depicted as rising with income, but declining with hours worked. That approach fails to recognise that *most individuals attach a positive value to having a regular job* – even though a good number might prefer to work shorter hours.[10] There are two main reasons why a regular job is valued. The first is that work is a major avenue of social integration and personal fulfillment. The second is that a regular job, where the employment relationship is expected by both parties to have some stability, is the basis on which other durable relationships or living patterns are built – like founding a family, owning a house, establishing community relationships or consumption patterns. For these reasons, it is natural to rank full employment as a major social objective.

Such a viewpoint is supported not only by welfarist or utilitarian approaches but also by theories of social choice and justice based on capabilities (Sen, 1985) or primary goods (Rawls, 1971). Sen emphasises "the positive freedom to choose how to live one's own life". Rawls emphasises,

[10] Drèze (1986) spells this out.

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Belgium	14.0	9.2	4.7	2.7	2.0	7.5
Denmark	–	12.1	7.1	4.0	3.4	8.3
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Ireland	25.8	15.1	6.6	3.9	2.6	13.9
Netherlands	13.6	7.6	4.8	4.6	5.0	6.5
New Zealand	9.3	4.7	4.9	5.1	2.9	6.0
Portugal	6.0	5.8	6.4	6.0	6.1	6.0
Spain	12.7	15.6	13.1	–	10.7	12.9
Sweden	–	1.4	0.9	0.9	1.0	1.0
Switzerland	–	1.4	0.6	0.3	0.8	0.8
Simple average of above countries	10.9	8.4	5.7	3.9	3.4	6.3

[a]Adult population aged 25–64 in 1989, excepr Japan (1987), Denmark (1988), New Zealand (1990) and Netherlands (1990).

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All	10.8	6.2

Source: Layard *et al.* (1991)

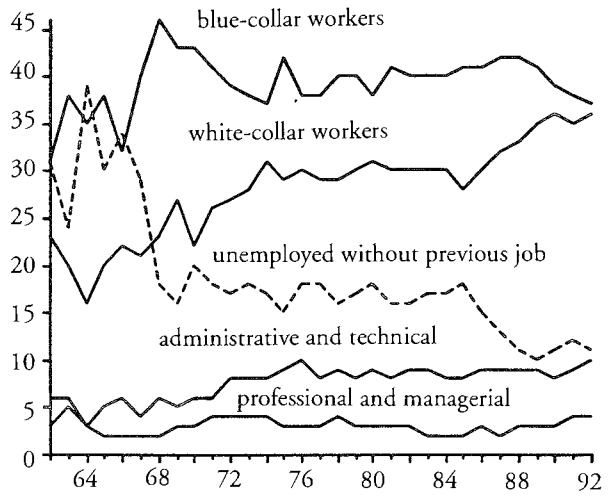
not know whether skill differences *within professional categories* are more significant than skill differences *between* these categories. The data for Britain and the US in Table 2, borrowed from Layard *et al.* (1991),[2] reveal that professional differences in unemployment rates are comparable to educational differences (as given in Table 1) in the US, and exceed these in the UK.

As for evolutions over time, Figures 1 and 2, pertaining to France, reveal much stability in the professional *distribution* of unemployment. But the general progress in education implies a declining proportion of less-educated workers in the labour force. Accordingly, the stable proportion of the less educated among the unemployed means a growing disparity between their fast-growing unemployment rate and the average rate (see Figure 2). This evolution implies clearly that *employment prospects* for the unskilled have deteriorated, both absolutely and relative to the prospects for the skilled. From a normative (policy) viewpoint, it is clearly desirable on efficiency grounds to reduce overall (inefficient) unemployment. When distributive considerations suggest a special concern for the least favored, they also give priority to reducing the *higher* unemployment rates. From a positive (theory) viewpoint, it is not clear whether the observed evolution also implies an increase in "skill mismatch" (mismatch between the skill composition of labour demand and supply). Different *theoretical* models suggest different measures of skill mismatch.[3]

[2] There are only two tables in that magnum opus involving educational or professional differences – but the significance of Table 2 is highlighted by the fact that it is printed three times (pp. 45, 290, 330). Although the data in Tables 1 and 2 do not cover identical years, they sustain unambiguously the comments in the text.

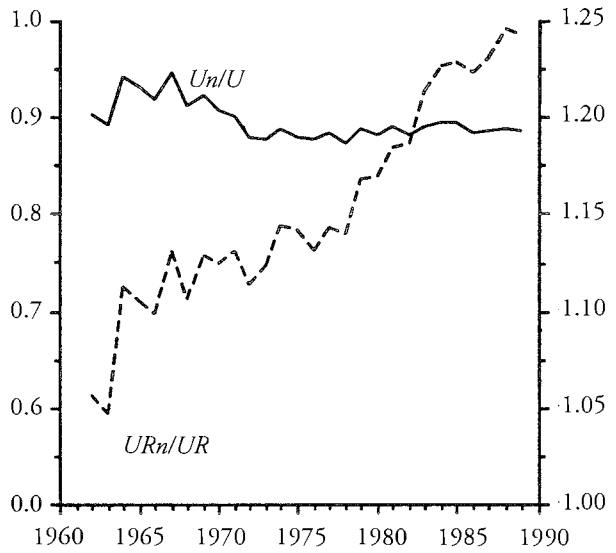
[3] Thus, Layard *et al.* (1991) would interpret the unchanged *distribution* as unchanged mismatch. Sneessens and Shadman-Mehta (1994) interpret the growing *disparity* as growing mismatch. The former authors start from a Cobb-Douglas matching function; the latter authors derive a CES employment function, by explicit aggregation over quantity-constrained firms.

Figure 1. Structure of unemployment by occupation in France
Percent of total unemployment



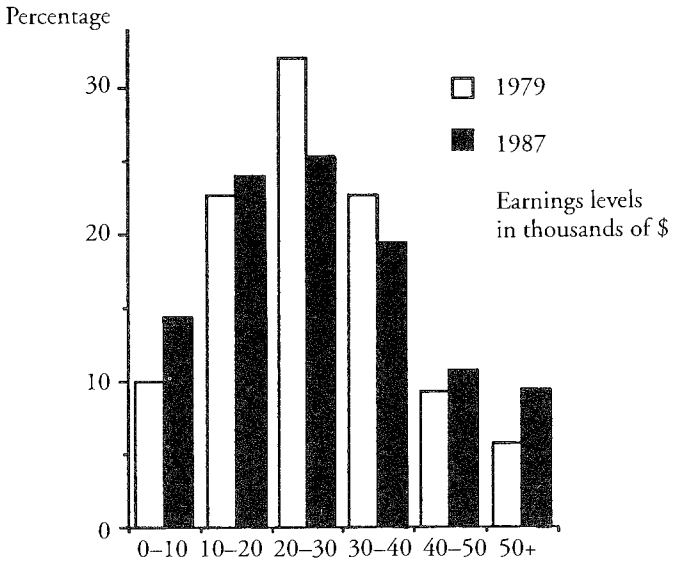
Source: Maillard and Sneessens (1993)

Figure 2. Low-skilled unemployment in France in levels (*Un/U*) and in rates (*URn/UR*) respectively
Proportions of total unemployment



Source: Maillard and Sneessens (1993)

Figure 3. 25–54-year old working men by wage and salary income 1979 (white column) and 1987 (black column)



Source: Levy and Murnane (1992)

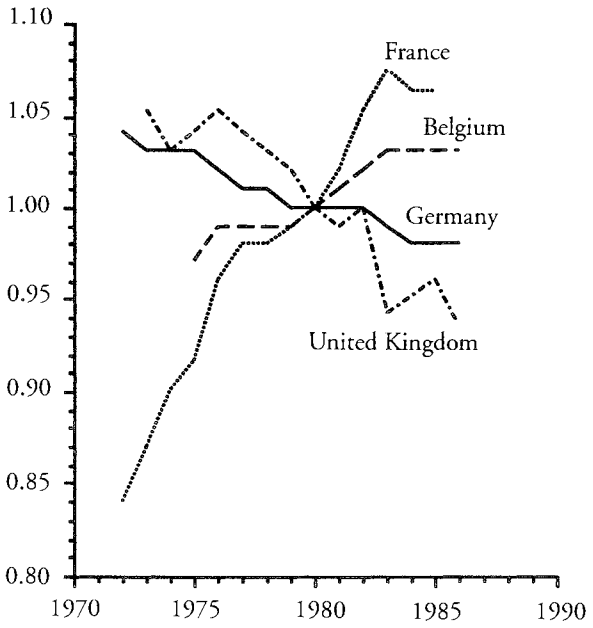
In the US, a reduced labour demand bears more on wages than on unemployment in the medium run. The weakened position of less-skilled workers is illustrated by Figure 3, which plots real wage distributions for adult men in 1979 and 1987, two years with identical median wages.[4] The proportion earning less than US $ 20 000 rose from 32 percent to 38 percent between the two years.

Have the wages of less-skilled workers declined, relative to those of more skilled workers, in Western Europe? The answer may differ across countries, as Figure 4 illustrates. The figure reproduces the evolution of the manual vs non-manual relative wage. The data for the UK, though not directly comparable, seem closer to the US experience: "Over the 1980s, the low paid have fallen systematically further behind average earnings." (Atkinson, 1993, p. 9).[5] At the other extreme, one finds the case of France, where the relative wage of less-skilled workers has substantially increased (see also Sneessens and Shadman-Mehta, 1994). Germany seems to be an intermediate case, with a moderately decreasing relative

[4] US $ 27 778 and 27 898, respectively, at 1988 prices.

[5] See also Atkinson (1993b) for a detailed documentation of increased income inequality in the UK since the mid-1970s.

Figure 4. Relative wage cost of manual versus non-manual workers
1980=1



Source: Eurostat

wage. One should, however, be careful when using the manual vs non-manual relative wage as a measure of the less-skilled relative wage. A closer look at German data (see Table 3) suggests the opposite, i.e., a slight *increase* in the relative wages of the unskilled, both *within* the blue-collar and *within* the while-collar group. This happened in spite of a marked decline in the proportion of unskilled jobs within both groups, and of the rise in unskilled unemployment.

Table 3. Ratio unskilled/skilled employment and wages in Germany

	Ratio unskilled/skilled employment		Ratio unskilled/skilled wage rate	
	Blue collar	White collar	Blue collar	White collar
1966	1.34	0.88	0.78	0.56
1970	1.42	0.75	0.78	0.57
1980	1.17	0.43	0.80	0.59
1990	1.02	0.38	0.82	0.58

Source: Maillard and Sneessens (1993)

1.2. Cyclical element

The arguments to the effect that cyclical unemployment affects the less-skilled workers more severely are well known (see e.g. Bean *et al.*, 1990). First and foremost comes the "ladder" effect. Skilled or educated workers who do not find jobs at their own level accept jobs below qualification, for which somehow they receive priority.[6] This aggravates the difficulties encountered by less-skilled workers: eventually, most of the unemployment becomes concentrated among unskilled workers, at the bottom of the ladder, where the possibility of work below qualification hardly exists.

The upgrading of labour qualifications during recessions was stressed for the US by Okun (1981). An element of indirect confirmation is found in the EC (1991) employment survey which shows that younger workers, hired after the rise of unemployment in the seventies, are more apt to work below qualification than their older colleagues.[7] The "ladder" effect stresses the employment consequences of wage rigidities at the low end of the wage scale – a feature to which we return below.

A second argument about cyclicality is related to labour hoarding. "Labour hoarding matters because it is likely that in the case of significant recruiting and training costs for skilled labour, firms will be more likely to choose to hoard skilled labour than unskilled labour during temporary downturns in activity" (Bean *et al.*, 1990).

1.3. Structural trend

The arguments in support of a structural shift in the skill composition of labour demand have been documented most systematically for the US. The wage differentials (as observed in the US) are more informative than unemployment differentials, because the former represent a quantitative measure and the latter only a qualitative one.

In the eighties the US has witnessed a substantial increase in the wage differentials associated with education (mostly the "college premium"), accompanied by an increase in the proportion of more educated workers. "The positive correlation of relative wages and quantity changes among

[6] It is reported by Bewley and Brainard (1993) that firms are reluctant to hire overqualified workers, whose morale will be low if there are no prospects for upgrading. Still, the superior ability of the more skilled or educated workers to find some job is seldom disputed.

[7] Unfortunately, no comparable data for a low unemployment period are available; one cannot exclude that work below qualification disappears with seniority, irrespective of the unemployment situation.

demographic groups in the 1980s strongly suggests that relative demand shifts ... are necessary to understand recent wage structure movements..." (Katz, 1992–93).

Three elements are invoked in explanation of the relative demand shifts.

(i) Skill-biased technical change, imputed to the spread of micro-computers and to the increased share of advanced technologies (high-tech) in the US capital stock.

(ii) The relative decline in the number of high-wage blue-collar jobs in industry, reflecting the relative stagnation of output, and sustained growth of productivity, in that sector ("deindustrialisation").

(iii) The increased competition from low-wage economies, interpretable as an increased implicit supply of less-educated workers ("outsourcing").

Quantitative assessment of the three effects and of their relative importance is difficult, and complicated by the need to allow for supply factors and for deviations from competitive wages. The first explanation is usually assigned the highest weight (to some extent by default), followed by the other two in that order. For the last effect, a weight of 15 percent is mentioned (Katz, 1992–3, p.13). We consider in more details the issues of skill-biased technical change and increased foreign competition.

1.4. Skill-biased technical change and factor substitution

The evidence of skill-biased technical change remains fairly limited and circumstancial. In the US, the starting observation is that skilled employment relative to unskilled employment has increased steadily after 1973. In the seventies, however, this increase was associated with a relative (as well as an absolute) real wage decrease, while in the eighties it was associated with a (relative) increase. If we assume full employment and perfect competition, this change must result from demand and/or supply shifts. The observed mix of employment and of real wage changes suggests that, at least in the eighties, the supply shift must have been accompanied by an even stronger demand shift.

Various studies, based on detailed micro-data bases, have tried to disentangle the various factors to be taken into account. The basic observation is that most of the wage premium for higher education accrues, *within* specif-

ic industries or sectors of the economy, as a reward for general, unexplained efficiency advantage (Bound and Johnson, 1992; Katz and Murphy, 1992). The identification of that advantage with technological development remains largely interpretative. Reference is made to studies reporting a *ceteris paribus* wage premium (17 percent in 1984 and 19 percent in 1989) for computer use (Krueger, 1993), as well as to a positive correlation between employment of highly educated workers and investment in computer technologies, intensive *R* & *D*, or high-tech capital intensity (Berman, Bound and Griliches, 1983; Berndt and Morrison, 1991). These illustrations are suggestive, but do not rule out alternative interpretations (e.g. in terms of product mixes within these industries). A more recent study (Entorf and Kramarz, 1994) on somewhat richer French data suggests that computer-based new technologies are used by abler workers, so that the wage premium obtained by the latter is not simply due to the fact that using new technologies increases their productivity.

Another source of information about demand for skills comes from the estimation of production functions. Bean and Pissarides (1990) constructed an econometric model with two kinds of labor (non-manual and manual), which they estimate sectoral data on British manufacturing over the period 1970–86. The authors obtain some evidence of non-neutral technological progress at the sectoral level, in favor of skilled labor. A similar finding is obtained on French data by Sneessens and Shadman-Mehta (1994). They distinguish two skill groups. A high-skill group consists of "professional and managerial workers", a lower-skill group includes all white-collar employees and blue-collar workers. The authors estimate a trend rate of substitution of the more skilled for less-skilled workers of some 4 to 5 percent per year before 1974 and 2 to 3 percent thereafter. That trend probably captures the three elements mentioned above to explain relative demand shifts. Such a trend is impressive, and it seems unlikely that the higher rate could have persisted. The decline after 1974, although at first glance contrary to the US evidence, is consistent with the lower rates of technological progress after 1974 found in many empirical studies in association with the slower growth of output and reduced investment rate (Drèze and Bean, 1990).

1.5. Foreign competition and factor price equalisation

International trade theory offers a direct argument in support of the claim that increased competition from low-wage economies should affect negatively the market position of low-skilled workers, resulting in lower

wages (or higher unemployment in case of downward wage rigidity). The argument comes from the factor-price equalisation theorems associated with the Heckscher–Ohlin model of trade.[8] These theorems state that, under certain conditions, *free trade in final* (e.g. consumer) *goods brings about international parity of factor prices* (e.g. wages).

The reasoning is straightforward. Assume that m goods are traded at competitive world prices p (a row vector), and produced through identical constant returns technologies, using m factors of production with input coefficients A (an $m \cdot m$ matrix). Let factor prices in country c be w_c. Equilibrium requires

$$p \leq w_c A \tag{1}$$

with equality in case of positive production. If country c produces the m goods, so that (1) holds with equality, and the matrix A has full rank, then (1) can be inverted to yield

$$w_c = pA^{-1}. \tag{2}$$

The factor prices are thus fully determined by the world prices of traded goods p, and should be identical in all countries producing the full set of these goods.

It is not easy to assess the relevance of the theorem, since the assumptions are relatively strict. On the one hand, it is clear that factor price equalisation forces are at work in world trade. In spite of numerous and significant departures from the theoretically sufficient conditions, competitive pressures on goods markets must entail *some* tendency towards wage convergence. On the other hand, prevailing departures from wage convergence are glaring and suggest that the pressures towards equalisation remain largely ineffective. In particular, the wage disparities displayed in Table 4 would seem to exceed by far what can be accounted for by tariffs, transportation and transaction costs, product differentiation, returns to scale and the like. At the same time, examples of relocation of activities to low-wage economies abound. It seems indeed hard to deny that low-skilled workers face increasing competition from low-wage economies, with negative implications for their wage and employment prospects. Of particular concern to Western European workers is the competition from Eastern Europe. The *ratio* of wage costs in the West and the

[8] Cf. Jones and Neary (1984), Ethier (1984) or Neary (1980) for surveys.

Table 4. Hourly wage costs for production workers in manufacturing, 1992

Country or area	Index US = 100	US Dollars
United States	100	16.17
Canada	105	17.02
Mexico	15	2.35
Australia	80	12.94
Hong Kong	24	3.89
Japan	100	16.16
Korea	30	4.93
New Zealand	49	7.91
Singapore	31	5.00
Taiwan	32	5.19
Belgium	136	22.01
Denmark	124	20.02
Finland	116	18.69
France	104	16.88
Germany	160	25.94
Ireland	82	13.32
Italy	120	19.41
Netherlands	128	20.72
Norway	143	23.20
Portugal	31	5.01
Spain	83	13.39
Sweden	150	24.23
Switzerland	144	23.26
United Kingdom	91	14.69
Trade-weighted measures		
All economies excluding the US	96	15.46
Europe	126	20.40
Asian NIE's[a]	30	4.84

[a]Asian newly industrialising economies (Hong Kong, Korea, Singapore and Taiwan).

Source: US Bureau of Labour Statistics, March 1993

East is alleged to exceed ten or sometimes even twenty.[9] Distances being what they are, it should not take very long for Eastern competition to spread across manufacturing and many services.

That increased competition from low-wage economies affects primarily the less-skilled workers in Europe and the US is the commonly accepted premise – confirmed to some crude extent by the analysis of US data.

[9] The data in Table 4 are not available for Eastern Europe. However, Plan Econ Inc. in Washington publishes data for net monthly wages which, in 1992, stood well below US $ 100 for Romania and Bulgaria, below $ 150 for the Czech Republic and Slovakia and below US $ 200 for Hungary and Poland.

But the confirmation remains crude. More detailed evidence, for specific skill groups, would be valuable.

2. Policy objectives

What conclusions should be drawn from the overview above? First, the position of less-educated workers is undoubtedly weak on today's labour markets, both in the US and in Europe. Second, that position is weaker today than 10–20 years ago, due to a combination of cyclical and structural forces. Third, there is a presumption that technological development and competition from low-wage economies have contributed to that deterioration. Fourth, in continental Europe, the resistance of relative wages of less-skilled workers has been an aggravating factor. Fifth, the competition from low-wage economies, including in particular Eastern Europe, is still far from having exerted its full effects. Sixth, the fragility of our knowledge on all these counts is both a cause of embarrassment and an invitation to prudence.

2.1. Jobs versus income

The situation thus summarized creates a difficult policy problem. Jobs and income are two dimensions of well-being. In much economic theorising, worker preferences are depicted as rising with income, but declining with hours worked. That approach fails to recognise that *most individuals attach a positive value to having a regular job* – even though a good number might prefer to work shorter hours.[10] There are two main reasons why a regular job is valued. The first is that work is a major avenue of social integration and personal fulfillment. The second is that a regular job, where the employment relationship is expected by both parties to have some stability, is the basis on which other durable relationships or living patterns are built – like founding a family, owning a house, establishing community relationships or consumption patterns. For these reasons, it is natural to rank full employment as a major social objective.

Such a viewpoint is supported not only by welfarist or utilitarian approaches but also by theories of social choice and justice based on capabilities (Sen, 1985) or primary goods (Rawls, 1971). Sen emphasises "the positive freedom to choose how to live one's own life". Rawls emphasises,

[10] Drèze (1986) spells this out.

under the name of self-respect or self-esteem, "having a rational plan of life, which calls upon a person's natural capabilities, and is confirmed and appreciated by others" (p. 440 *passim*). A regular job is undoubtedly essential to these achievements.

2.2. The policy dilemma

In our view, it must remain an important policy objective in its own right that the *least*-skilled or educated workers have access to regular jobs, susceptible of providing an adequate basis for freely planning their lives. It must also be a policy aim that these jobs provide an adequate income, which is equally essential to positive freedom. The policy dilemma is that if the position of less-skilled workers is indeed weakened, and threatened to remain weak for a number of years to come, it will be difficult to reconcile the goal of providing jobs to all with the goal of providing an adequate income to all. Market clearing wages will not satisfy the income goal, wages yielding an adequate income will not be conducive to full employment. This conflict of goals between full employment and income protection is vividly illustrated by the contrast between the US (with more employment at lower wages) and Western Europe (with higher wages but more unemployment).[11]

Reconciling full employment with "adequate" incomes for less-skilled workers leaves few options. The first is of course education and training to raise skill levels. From a long-run viewpoint this is undoubtedly the most constructive policy. Every effort should be made to pursue it effectively. This probably calls for devising more effective training programs than straight schooling – since the target group consists mostly of workers who leave school early, in spite of the broad availability of public education. The success of the German and Austrian apprenticeship system remains a model worthy of understanding and emulation (Soskice, 1994). Also, due attention must be paid to the issue of working habits and discipline, which is distinct from that of technical skills.

There are, however, two limits to what can be accomplished through training. A long-run limit concerns the minority of workers with limited learning abilities. A short-run limit concerns the special problems associated with the current high level of unemployment. Training brings some of the unemployed to the head of the queue, but does not affect the

[11] See also the conclusion in Freeman (1993).

length of the queue.[12] Except for isolated narrow qualifications, hardly accessible to the bulk of those presently unemployed, labour supply is not a constraining factor today. Measures addressed to labour demand, including reductions in labour costs, must be the order of the day.

The crux of the dilemma is thus now *to reconcile labour costs low enough to promote employment of low-skill workers with reasonable incomes for these workers and proper incentives towards economic efficiency* (incentives to work and incentives to acquire skills). The difference between the short run and the long run is the number of workers concerned, but not the nature of the dilemma. We should be prepared to face the dilemma squarely, and for many years to come.

It is obvious that the dilemma so defined is a matter of public policy. There are no private incentives to address the problem. Any solution involves an element of contemporaneous redistribution – even though, from a longer run viewpoint (from the viewpoint of unborn members of a future generation, whose native skills are stochastic), redistribution may be interpreted as efficient risk-sharing.[13] What policies are conducive to "reconcile labour costs low enough to promote employment of low-skilled workers with reasonable incomes for these workers and proper incentives towards economic efficiency"? We review two main policy alternatives. One involves minimum wages with appropriate labour taxes or subsidies, the other is based on flexible wages with appropriate income transfers. Prior to that review, we discuss briefly the related policy objective of a trade liberalisation.

2.3. Free trade as a policy objective

With reference to competition from low-wage economies, it must be recognised that our current practice includes definite elements of protectionism, especially with regard to immigration. The merits of free trade are not unequivocal or unchallenged.[14] It is natural to wonder whether economies with elaborate programs of social protection can afford to face the competition from low-wage economies. Perhaps they should protect themselves from wage equalisation by restricting the imports of goods or services produced in low-wage economies.

[12] See Calmfors (1994) for a more extensive discussion.

[13] See Drèze (1989) or Drèze and Gollier (1993) for an elaboration of that condensed starement.

[14] Maurice Allais has been a vocal critique of the GATT agreements; see his articles in *Le Figaro* of November 15 and 16, 1993, and references given there.

The second-best argument in support of protectionism rests on the domestic distortion associated with downward wage rigidities (due to minimum wages or simply to unemployment benefits). In the presence of such a distortion, a tariff protection may Pareto-dominate free trade from a world viewpoint (Drèze 1993b). However, the tariff policy is superior only when world prices are not too far away from domestic prices under autarchy. And the Pareto-domination requires compensating transfers (aid).

Our purpose here is not to endorse the protectionist argument. It is rather to underscore the implications of domestic distortions and the desirability of avoiding them, if possible. It is also to list free trade as a potential policy objective in its own rights. As noted by Krugman (1993) and McCulloch (1993) in a recent overall assessment, it may well be that "free trade is suboptimal in theory yet optimal in practice" (loc. cit. p. 371). A pressing issue for Western Europe today is the speed and extent of openness to the East – where disequilibrium is pervasive. Raising productivity and wages in Eastern Europe is the key dimension of convergence, and should be promoted (with the prudence suggested by the East German situation). Still, it is part of the overall picture that we are a long way from equilibrium at the world level, that we will face mounting competition from low-wage economies for many years to come, a competition particularly detrimental to low-skilled workers, and that we must aim for some kind of second-best outcome.

3. Policy alternatives

3.1. Minimum wages cum tax exemptions or subsidies

To set the stage, we present in Table 5 some data on minimum wages in ten Western European countries. A striking feature is the high ratio of minimum wages (where they exist) to median wages (namely, 60 to 70 percent). We may add that the fraction of workers whose wages are directly tied to the minimum is of the order of 10 percent (CERC, 1991). We also present in Table 6 some data on Social Insurance Contributions (SIC) and income taxes in nine European countries, the US and Japan. According to the table, the average wedge in Europe is close to 40 percent , with 24 percent coming from employer contributions (ESIC), 11 percent from employee contributions and 15 percent from income taxes (at mean earnings).

Table 5. Minimum wages in Western Europe

Country	Year	System	Level (ECUs per month)	Ratio to median wage (%)	Exceptions
Belgium	1988	Economy-wide at age 21	783	66	–7.5% per year of age below 21
Germany		Negotiated at sectoral regional level			
Spain	1991	Economy-wide at age 18	399	54	–39% at age 17 –61% below age 17
France	1987	Economy-wide at age 18	556	61	not applicable below age 18
Greece	1988	Economy-wide private sector public sector	 332 418	 67	depends upon marital status and seniority
Ireland		No minimum wage			
Italy		Negotiated at sectoral level			
Netherlands	1988	Economy-wide at age 23	898	72	–10% per year of age below 23
Portugal	1985	Economy-wide at age 18	148	73	–25% below age 18 –17% for domestic services
UK		No minimum wage			

Source: CERC (1991)

3.2. Reducing taxes on minimum wages

The first natural step towards reconciling low labour costs to employers with reasonable workers' incomes is to eliminate the wedge driven between them by SIC and income taxes. A recent policy initiative paper by Drèze and Malinvaud *et al.* (1994) suggests exempting minimum wages from ESIC in all European countries, with substitute resources allocated to Social Security from indirect taxation (with preference for an EC-level energy tax). The main suggestion is to scale the exemption so that it disappears around median or mean wages. This implies a reduction of labour taxes on all wages below the median, but an increase in marginal rates between the minimum and the median. (In countries without a well-defined minimum wage, wages below two-thirds of the median should be fully exempted according to the proposal.)

Table 6. Social insurance contributions and income tax at average earnings (blue-collar workers), 1991

	SIC rates		Average income tax rate	Wedge as % of private cost
	Employer	Employee		
Belgium	41.9	12.1	11.6	46.2
Denmark	0.0	2.5	36.0	38.5
France	43.8	17.1	1.0	43.1
Germany	18.2	18.2	8.7	38.1
Ireland	12.2	7.8	16.4	32.4
Italy	50.1	9.0	14.2	48.9
Netherlands	10.8	10.7	32.5	48.8
Portugal	24.5	11.0	0.9	29.2
UK	10.4	7.6	15.5	30.3
Unweighted mean	23.5	10.7	15.2	39.5
US	7.7	7.7	11.3	24.8
Japan	7.6	7.0	2.4	15.8

Source: OECD, *Economic Perspectives*, January 1993

We first explain the reasons for the specific modalities, then the overall logic. ESIC are singled out so as to reduce labour costs to employers without affecting take-home pay. The incentives to reduce labour costs exist in all EC countries, due to high unemployment concentrated among low-skilled workers. Whether take-home pay at minimum wages should be reviewed upwards or downwards is a matter to be considered country by country, given the marked differences in absolute levels revealed by Table 5. There may also exist specific motivations, linked to the ratio of unemployment benefits to minimum wages and the need to maintain work incentives. The matter of income tax introduces the issues of comprehensiveness and progressivity. It is better kept separate, though in Denmark it would come into the picture if the wedge is to be reduced (ESIC is zero in Denmark).

Lower labour costs are clearly desirable at the low end of the wage scale. Where minimum wages are set by law, they may be kept at unchanged levels when ESIC are eliminated. At the upper end, it is likely that wages clear markets for specific skills, so that ESIC reductions would result in unnecessary wage increases. That is a good reason to scale the exemption down to zero around the center of the wage distribution. In comparison to a flat exemption applicable to all wages, the loss of revenue is reduced by a factor of 3 to 1 (Drèze and Malinvaud *et al.*, 1994).

The rationale for exempting minimum wages from ESIC is twofold.

First, if one wishes to reconcile lower labour costs with reasonable incomes, it does not make sense to aggravate the problem through mandatory contributions (taxation). Second, the deadweight cost of redistributive programs is a reason to aim for uniformity, that is to "equalise, as far as possible, the benefit levels in all social security systems between which individuals are likely to move" (Lindbeck *et al.*, 1994, proposal 50). This principle of uniformity would recommend that Social Security benefits of recipients of minimum wages be set at roughly the same levels as those of unemployed or non-working persons. In several countries, the current situation is close to that guideline. In such a case, the fact that a person takes up employment at minimum wages has zero marginal cost for the social security system. It is thus logical to finance minimum level benefits from general revenue, while putting the higher tiers on an actuarial basis.[15]

The benefits expected from the proposed measure depend upon the wage-elasticity of effective demand for low-paid labour. That elasticity is alleged to be higher at low wages than at high wages, in particular due to substitution between skills and with capital (see Hamermesh, 1986). By scaling the exemption down, substitution of high for low skill is further discouraged; by taxing energy, which is complementary to capital, substitution of capital for labour is discouraged.

The econometric simulations carried out at DGII of the European Commission (EC, 1993a), at Office Français des Conjonctures Economiques (Sterdyniak *et al.*, 1994) and by Sneessens and Shadman-Mehta (1994) concur in suggesting medium-term effects of the order of 2 percentage points of employment for ESIC exemptions on low-skilled wages amounting to 1 percentage point of GDP, *at unchanged budget deficits.* The Drèze and Malinvaud *et al.* proposal is thus at best a partial remedy to the current unemployment problem, but still a highly desirable one.[16] The only questionable aspect is the increased *marginal* rate of ESIC between minimum and median or mean wages. (By and large, marginal ESIC rates would be doubled over that range.) This should not affect individual incentives to acquire skills, since take-home pay is unaffected. But it might discourage firms from investing in worker skills in that range due to the increased relative costs of more skilled labour. However,

[15] "Actuarial" should be understood in terms of reinsurance prices, which allow for state-dependent corrections, rather than in strict probability terms. With that understanding, we agree with proposals 45–46 of Lindbeck *et al.* (1994).

[16] If the low-skilled workers represent 30 percent of the labour force, 2 percentage points of total employment represent 6.6 percent of the low-skilled labour force. The simulations report a higher gain of low-skilled employment but some decline of skilled employment.

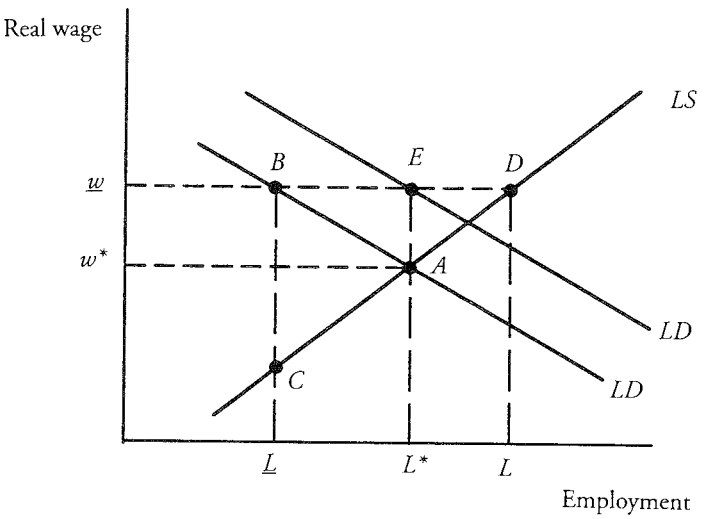
the initial cost of training is also reduced, to the extent that it consists of unskilled labour time. The upshot is ambiguous, and unlikely to matter.

3.3. Minimum wages cum subsidies

A further avenue towards reconciling employment, incomes and incentives keeps minimum wages and unemployment benefits at a level deemed reasonable for income protection, but issues *employment subsidies* to firms using low-skilled labour. This is entirely analogous to the ESIC exemption proposal, carried into *negative contributions* (the subsidies). The exemption proposal is meant as a partial correction to the massive wasteful unemployment which prevails today. Employment subsidies could aim at restoring full labour-market efficiency. This raises the issue of how to define an efficient outcome in the presence of subsidies. The issue is illustrated in Figure 5.

In the figure, labour demand is *LD*, labour supply is *LS*, and the competitive outcome (w^*, L^*) is at *A*. The figure is supposedly drawn for unskilled labour. The construction could be interpreted as keeping constant the wages for higher skills. Alternatively, and more meaningfully, it should be interpreted as incorporating implicitly the adjustments in wages and employment for higher skills that would naturally accompany changes in unskilled wages. In particular, if higher unskilled wages lead to

Figure 5. Labour-market equilibrium with subsidies



higher wages and less employment at the next skill level, the additional unemployed of that next level enter the labour supply in the figure ("ladder" effect). The elasticity of "effective" labour supply is thus a hybrid concept, combining the effect of wages on participation rates for low-skilled workers and the effect of low-skilled wages on unemployment at other skill levels. Similarly, but less importantly perhaps, labour demand should be interpreted as inclusive of skill-substitution effects, given the adjustments of other wages to unskilled wages.

Suppose now that w^* is lower than the wage level $\underline{w}$ deemed to provide a reasonable income to unskilled workers. Under a minimum wage equal to $\underline{w}$, the market outcome is at B, with employment $\underline{L}$ and wasteful unemployment $L^*-\underline{L}$.[17] Note, however, that measured unemployment at $\underline{w}$ will be $\bar{L}-\underline{L}$, since effective labour supply will correspond to point D in the figure.[18] In order to bring about an efficient level of employment, an employment subsidy equal to $\underline{w} - w^*$ could be offered to firms, thereby raising their labour demand to LD'. The outcome will then be $(\underline{w}, L^*)$ at point E. Note again that measured unemployment will remain positive, and equal to $\bar{L} - L^*$. A little calculation shows that

$$\frac{\bar{L} - L^*}{\bar{L}} = \bar{u} \approx \frac{\underline{w} - w^*}{w^*} \cdot \eta_{LS \cdot W}$$

and hence

$$\frac{\underline{w} - w^*}{w^*} = \frac{\bar{u}}{\eta_{LS \cdot W}}, \tag{3}$$

[17] A rough measure of the waste is given by the triangle ABC. To a first approximation, the area of that triangle is

$$\frac{w^*}{2}\left(\frac{L^*-\underline{L}}{L^*}\right)\left(\frac{1}{\eta_{LS \cdot W}} - \frac{1}{\eta_{LD \cdot W}}\right)$$

where $\eta_{LS \cdot W}$ is the wage elasticity of labour supply and $\eta_{LD \cdot W}$ the wage elasticity of labour demand.

[18] A simple calculation, analogous to that underlying the previous footnote, shows that

$$\frac{L^* - \underline{L}}{\bar{L} - \underline{L}} \approx \frac{\eta_{LS \cdot W}}{\eta_{LS \cdot W} - \eta_{LD \cdot W}}$$

This formula could be used to evaluate what fraction of measured unemployment is wasteful unemployment.

where $\eta_{LS\cdot W}$ denotes the wage elasticity of labour supply. In other words, the subsidy leading to an efficient employment level is a percentage of the market wage approximately equal to the ratio of measured unemployment to the elasticity of labour supply. We do not regard that elasticity as known or easy to estimate. One should also ask whether the unemployed at E are those workers whose reservation wage exceeds w^*; the answer is probably negative.

3.4. Flexible wages cum transfers

The alternative to ESIC exemptions and/or employment subsidies is to lower or eliminate minimum wages as well as unemployment benefits, and issue workers a transfer independent of employment status.[19] The need to consider simultaneously wages and unemployment benefits is obvious: lower wages at unchanged benefits would destroy incentives to work, which are already minimal in some cases today.

We concentrate on the simplest proposal, which calls for letting wages adjust to clear the labour market, with no unemployment benefits, while issuing transfers independent of employment status. Such transfers are called "social dividend", e.g. by Meade (1989) or "participation income", e.g. by Atkinson (1993). The simple idea is to reconcile market-clearing wages with income protection by issuing a transfer to all or most *citizens*, whether employed or not. Proponents of this idea typically advocate individual transfers, accruing in the same amount to all male and female adults, with lower amounts for children (and possibly higher amounts for elderly or disabled individuals). The "participation income" variant restricts benefits to members of the labour force (employed or unemployed) and specific groups such as workers enrolled in training programs, persons doing voluntary work or caring for dependents and disabled persons. Whatever the variant, all other forms of social transfers (pensions, family allowances, sickness allowances, unemployment benefits) are discontinued. The transfers are financed from general revenues. The standard example is a proportional income tax on all income other than the social dividend, with abolition of all income tax allowances.

The first merit of this idea is (hopefully) to restore labour-market efficiency at the low end of the wage scale, by letting wages fall to market-clearing levels and eliminating the so-called "unemployment trap" – a

[19] See Drèze (1993a) as well as Sneessens and Van der Linden (1994) for earlier comparisons of these alternatives.

term referring to situations where work is discouraged by the prospective loss of unemployment benefits or means-tested allowances. The second merit is to introduce simplification and uniformity into our social security systems, which have grown in complexity. The main drawback is a relatively high budgetary outlay, which means a high level of distortive taxes. In particular, higher income tax rates may interfere with labour-market efficiency at higher wage levels.

As an illustration, Atkinson (1993) reports the possibility of funding a participation income of 936 pounds per adult per year on a "revenue neutral" basis, and of 1976 pounds per year if income tax rates were raised by 10 percentage points. (In these calculations, means-tested benefits are maintained, but the number of recipients falls by 10 percent and 50 percent respectively.)

One major issue raised by this approach is that of market-clearing wages. Would a (nearly) competitive outcome emerge on the market for low-skilled labour? This is of course a complex issue, which cannot be treated properly here. Serious doubts about the possibility of implementing market-clearing wages come from theories of wage formation that stress the exercise of market power by unions (see e.g. the surveys of Oswald, 1985; or Pencavel, 1985) or insiders (see Lindbeck and Snower, 1988). The more specific insider–outsider theory links that market power to the costs faced by firms attempting to hire below prevailing or contractual wages.[20] It would be in the spirit of that theory to recognise that these costs are apt to be lower for less skilled workers (which may help explain the recourse to legal minimum wages, rather than contractual union wages, for low-skilled labour). On the other hand, there seems to exist a broad social consensus in favour of minimum wages, a consensus that might be mobilised in favour of the alternative based on a form of "participation income".

3.5. An earned-income credit

An intermediate program consists of abandoning minimum wages, but keeping unemployment benefits, while issuing transfers to low-paid *employed* workers, thereby restoring incentives to work. The "earned income credit" practised in the US is an example (see International Revenue Service, 1993, Section 35). The idea is to eliminate the "unemployment

[20] Bewley and Brainard (1933) implicitly offer an "upside-down" explanation, where the reluctance of firms is linked to the morale of new hires rather than to the activities of insiders.

trap" by making up, in totality or in part, the loss of benefits suffered by an unemployed who goes to work. The US earned income credit has a ceiling of US $ 1 511 per year. This may be compared to average benefits, assessed by Burtless (1987), at US $ 4 350 per recipient.[21] Also, the credit falls progressively from its maximum at the income level US $ 12 200 down to zero at income level US $ 23 050. An additional requirement for eligibility is a "qualifying child".

Under full replacement, the combination of unemployment benefits and an earned-income credit is comparable to a subsidy *per worker* independent of employment status. Compared to a participation income, it is limited to workers. The cost can also be reduced by eliminating the credit progressively as earned income rises.

3.6. The market for personal services

Thus far, we have concentrated on reducing labour costs as a way of promoting employment of low-skilled workers. Reduced labour costs may promote employment by slowing down capital-labour substitution or skill substitution. They may also promote employment through lower relative prices for goods with a high intensity of low-skilled labour. It must, however, be recognised that technological development and competition from low-wage economies narrow down the range of goods or services where employment prospects exist. One area is immune from competition from either machines or foreign workers, namely "proximity services", which involve a *local personal* relationship. There seems to exist a domain of growing but imperfectly met needs, with an employment potential so far unrealised.

The following list of "proximity services" appears in EC (1993b):

1. Assistance to elderly and disabled persons
2. Childcare
3. Assistance to young outcasts
4. Assistance to school children
5. Personal and public safety
6. Home improvements
7. Collective local transportation
8. Environmental protection
9. Cultural and recreational activities
10. Neighbourhood stores.

[21] These are US $ at 1980 prices.

The list is quite heterogeneous. We quote it as suggestive of directions worth exploring.

The question of interest here is whether these directions hold promise for low-skilled jobs. Answers are mixed and vary down the list. Still, if one considers why employment towards meeting these needs is not more developed, two reasons come up recurrently: demand insolvency at market prices, and limited supply through firms resorting to paid employment.

One suggestion towards addressing the *demand-solvency* aspect has received some attention in France and Belgium, namely "service vouchers" (also mentioned in EC, 1993b). The underlying idea is to privilege personal services as an area of early implementation of some of the measures discussed above, by allowing households hiring labour to deduct from their own income tax the taxes applicable to their hirings (employee SIC and income tax of the worker).[22]

This may sound farfetched, and quite remote from our subject. Perhaps it is not; experience will tell. We think, however, that in many cases (like items 5 to 8 on the above list) a more structured organisation of the *supply side* will be needed, to pull long-term unemployed and low-skilled workers into the production of proximity services. This element is important to translate measures of labour cost reduction into employment. Again, some suggestions exist – like the Belgian proposal to exempt non-profit organisations producing proximity services from ESIC on low-skilled labour (a proposal also mentioned in EC, 1993b).

4. Conclusion

Although the evidence remains in part circumstancial, we believe, together with a growing number of American labour economists and European policy advisers, that technological development and competition from low-wage economies confront Western European countries with a difficult policy dilemma: is it possible to reconcile labour costs low enough to promote full employment of low-skilled workers with reasonable incomes for these workers and proper incentives for economic efficiency?

[22] The name "service vouchers" arose from a specific proposal, whereby households could buy at Post Offices vouchers with which the services of unemployed workers could be hired: one page of the voucher would be used by the worker in payment of employee SIC and income tax, another page would be used by the hiring household to claim an income tax deduction.

Constructive measures towards resolving that dilemma start with practical education and training, then go on to promote the demand and institutionalised supply of proximity services. Reliance on the price mechanism points towards measures reducing or eliminating the wedge between labour costs to employers and net marginal earnings of employees. A basic policy choice must be made between on the one hand the avenue of minimum wages, unemployment benefits and employment subsidies concentrated on the low end of the wage scale; and on the other hand the avenue of flexible wages, hence no durable unemployment benefits, but a "participation income" issued on an individual basis to all adult members of the labour force. Although the second avenue has some merits, including its more "individual" approach to social security, these hinge crucially on the prospects for implementing flexible wages. Union-wage and insider-outsider theories of wage determination cast doubts but would need to be verified specifically for low skill levels.

Short of making that basic policy choice, reductions or exemptions of employers' contributions to social security constitute a natural first step, that deserves urgent attention from policymakers. Such measures are indispensable to the sustainability of free trade between countries with highly dissimilar levels of social protection.

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