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Why is Unemployment in France So High?

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Abstract

High and persistent unemployment, as well as its composition, e.g., high youth unemployment, suggests underlying structural problems in the French labor market. Comparisons with other industrial countries, as well as time series and cross-section empirical evidence, point to a number of potential causes of structural unemployment in France. These include the generosity of long-term relative to short-term unemployment benefits, the minimum wage, the level of employers' tax wedge, skills mismatch, and the cost of capital. The paper assesses recent labor market measures in France that are considered, on the whole, as a step in the right direction, and puts forward a number of additional possible measures which could help to ensure that when the economic recovery gathers pace, unemployment will decline more quickly and more substantially than in the past.

JEL Classification Numbers
E24, J31, J32, J38, J64, J65

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Summary

High unemployment is, arguably, the most urgent problem facing the French economy. In the first quarter of 1994, the unemployment rate stood at just above 12 percent. Although the slowdown in economic activity has undoubtedly contributed to a worsening of labor market conditions in France, the high rate of unemployment cannot simply be attributed to a lack of demand. The model estimated in this paper gives a NAIRU (nonaccelerating-inflation rate of unemployment) of 8.2 percent in 1992, only 2 percentage points below the actual unemployment rate in that year.

Continuously high unemployment, and features of its composition such as high youth unemployment, suggests underlying structural problems. Although labor supply has been rather high over the last twenty years, high unemployment seems to stem from a lack of job creation. Because of labor market rigidities, demand and supply distortions, such as the twin oil shocks and the high interest rates associated with German reunification, have led to persistent unemployment or hysteresis.

Comparisons with other industrial countries, as well as time series and cross-section empirical evidence in this paper, point to a number of potential causes of structural unemployment in France. These include the generosity of long-term relative to short-term unemployment benefits, the minimum wage, the level of employers' tax wedge, a mismatch of skills, and the cost of capital.

In November 1993, the Parliament approved a five-year employment plan containing over fifty new measures, including further reductions in employers' social security contributions for the low paid, wage subsidies for young workers, measures to enhance work time flexibility, and increased funding for government-subsidized employment and training programs.

Many of the above measures will have a positive impact on the labor market, and the economic upturn should bring about a fall in unemployment. However, the key question is whether this decline will be faster and more substantial than during the previous upturn. To ensure this, the paper concludes that it is necessary to take further measures, particularly in areas such as labor costs, where only modest progress has been made. Additional measures that could have an immediate impact include further declines in employers' social security contributions financed through reducing the generosity and duration of unemployment benefits and a reduction in the legal minimum wage, preferably directly, otherwise through existing employment programs. Other measures to enhance labor market flexibility in the long run include shifting expenditure from passive to active labor market measures (for example, job subsidies for the long-term unemployed instead of unemployment benefits), re-directing labor market programs from the public sector toward job creation in the private sector, and introducing tax incentives for profit sharing.

I. Overview

High unemployment in France has persisted despite the fact that in recent years France's macroeconomic performance has compared favorably with the other G7 or EC countries in other respects. Over the last five years, growth has been in line with EC and the G7 averages while inflation has been below both. Low inflation has contributed to improved competitiveness and, recently, to trade surpluses. However, employment creation was disappointing even in times of strong growth and the recent recession has led to a sharp fall in employment.

Unemployment not only puts pressure on government finances and inflicts a heavy social cost, it also has more wide ranging economic consequences. The higher the structural unemployment in an economy, the lower its potential output, and hence the average standard of living, will be. Furthermore, high unemployment can endanger the credibility of monetary policy. For example, a rise in interest rates--say, to protect the level of the exchange rate--may be viewed as unsustainable by the financial markets and have a perverse impact. The crises in the European Exchange Rate Mechanism during 1992 and 1993 are testimony to this. 1/ There are, therefore, many reasons to seek a better understanding of the problem of high unemployment.

This paper investigates the causes of unemployment in France and assesses the effectiveness of potential policy responses aimed at reducing it. The paper is organized as follows: Section II examines the nature of unemployment in France; Section III identifies some of the potential factors contributing to unemployment by comparing France to other industrial nations and by using cross-section regressions; Section IV provides some time-series evidence on the long-run and short-run causes of unemployment; Sections V and VI examine recent labor market measures; and Section VII assesses these measures and considers other potential policy responses to structural unemployment.

II. The History and Composition of French Unemployment

1. The rise and rise of unemployment

Following the first oil shock and the onset of recession in 1974-75, unemployment in France rose continuously from just under 3 percent in 1973 to a peak of 10.7 percent in 1987. It then declined gradually to 8.8 percent in 1990 before resuming its ascent (Chart 1).

1/ Drazen and Masson (1994) find support for the hypothesis that persistence in unemployment can undermine the credibility of monetary policy.

Both labor supply and demand factors appear to have contributed to the rise in unemployment. Between 1970 and 1992, the labor force grew by about 16 percent, equivalent to 3.3 million people (Chart 2). This growth came about in spite of a fall in the aggregate participation rate 1/ during the 1980s--the increase in female participation was more than offset by a decline in male participation (Chart 2). 2/ The growth in the labor force was thus concurrent with an even larger increase in the population of working age, conventionally defined as those aged between 15 and 64.

During the same period, employment growth has been disappointing: there was no net increase in employment between the mid-1970s and the late-1980s. Male employment dropped almost continuously between 1973 and 1987 as employment in the traditionally male dominated industrial sectors such as mining, chemicals, and metals declined. Growth in the service sector and opportunities for part-time work boosted female employment, which has grown continuously since the early 1970s, albeit not as fast as the increase in the female labor force (Chart 3).

Why has the high growth of the labor force not been accompanied by an equivalent increase in employment? An increase in the labor supply should, in theory, lead to higher output through lower real wages, increased competitiveness, and increases in production capacity unless the labor market is inflexible. Besides, there have been similar demographic developments in other industrial countries: in both Canada and the United States the average rate of growth of the labor force since 1970 has been more than twice that in France, yet the average rate of growth of employment in the United States and Canada has been over four times that in France.

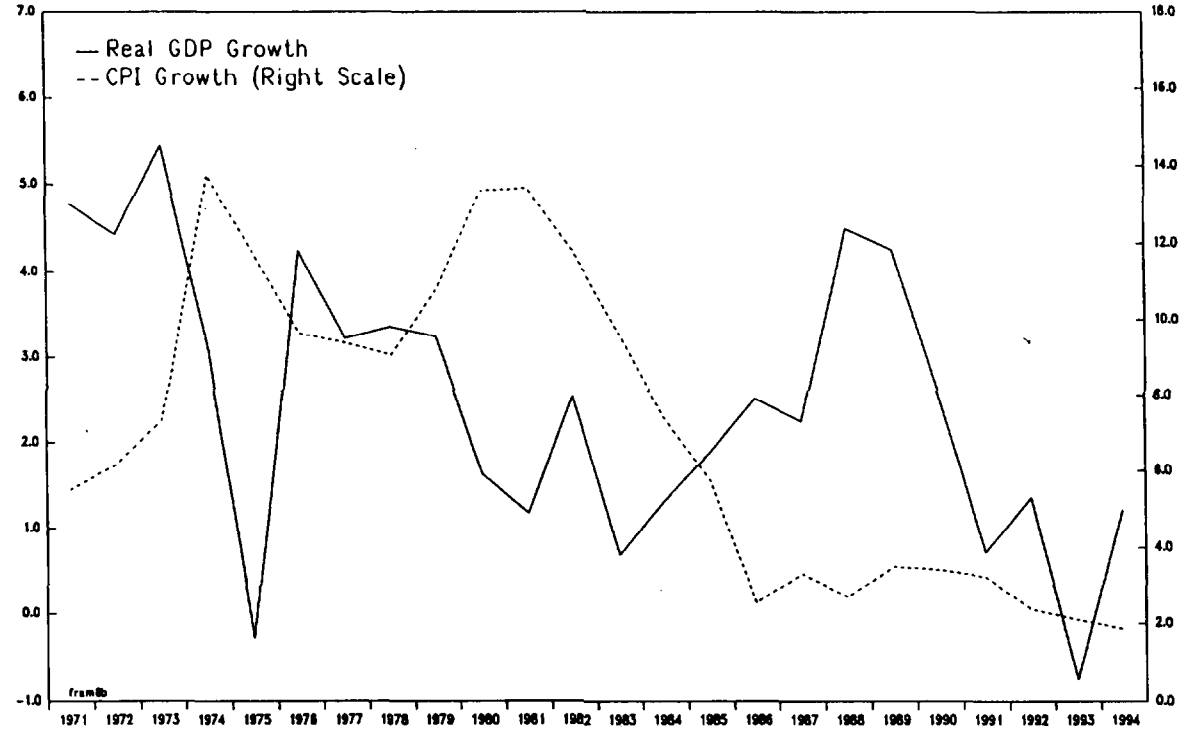
Over the last two decades the average rates of growth of the population of working age and the labor force in France have been below the OECD average, though more or less in line with the EC average (Table 1). It is the rate of growth of employment in France that has been disappointing, particularly when compared to the OECD average in the 1980s.

1/ Defined as LF/PW=(E+U)/PW, where LF is the labor force, E employment, U unemployment and PW is the population of working age.

2/ The fall in the male participation rate is not independent of the rise in unemployment and is partly due to the early retirement of the old unemployed, see discussion of participation rate by age below.

CHART 1
FRANCE

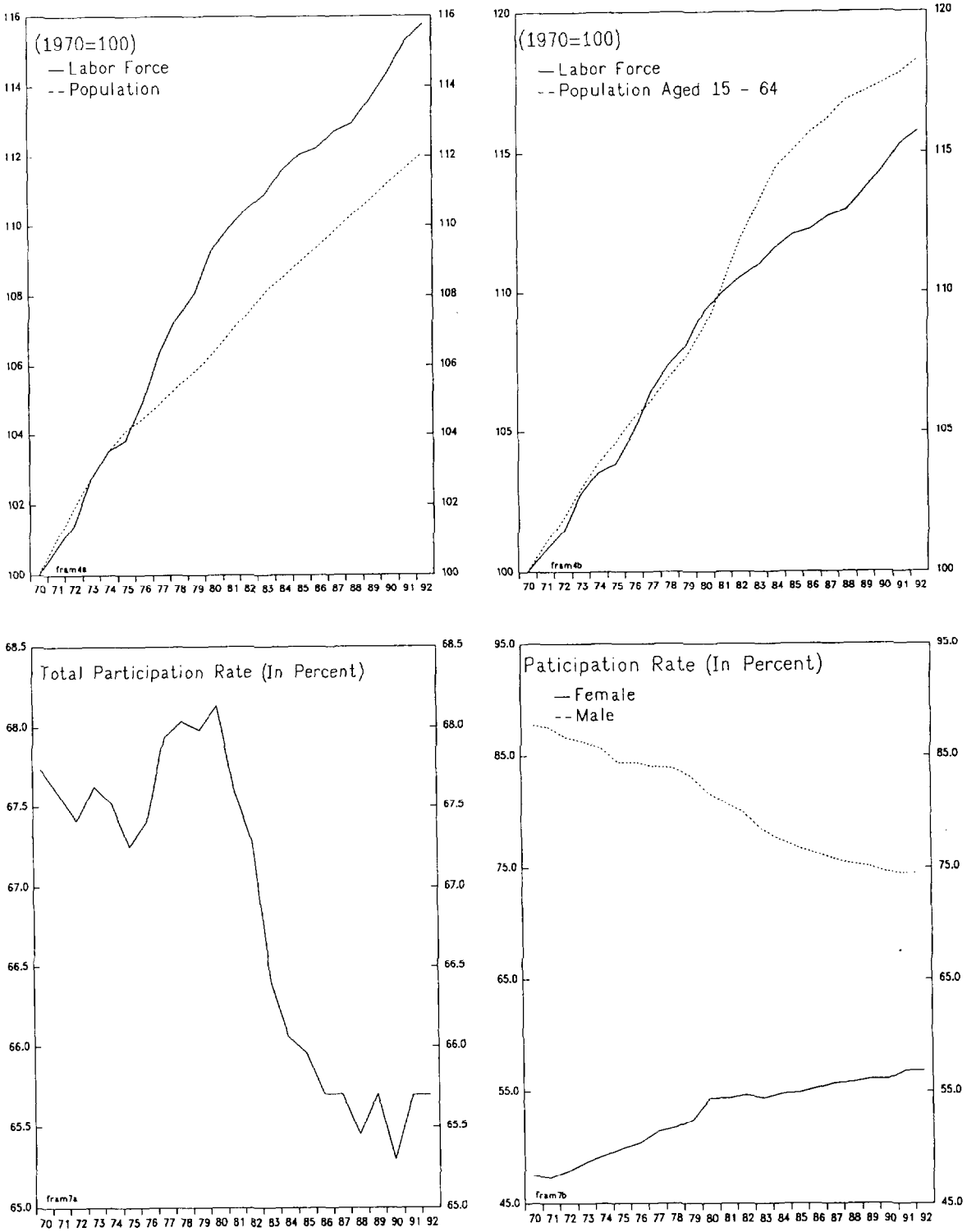
Unemployment Rate, Growth, and Inflation



Sources: INSEE, National Accounts; and IMF, World Economic Outlook.
1/ February 1994.

CHART 2
FRANCE

Labor Force, Population and Participation Rate

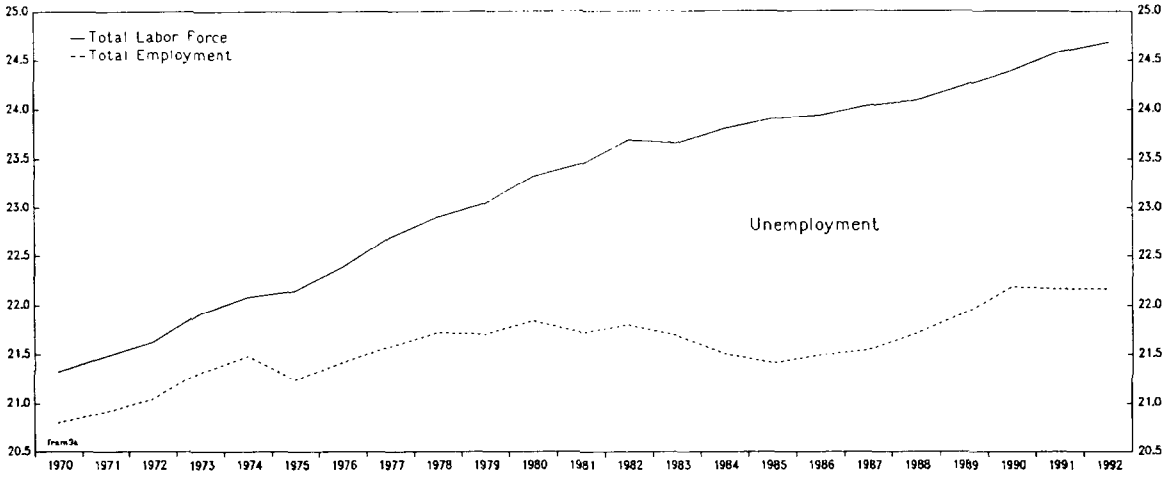


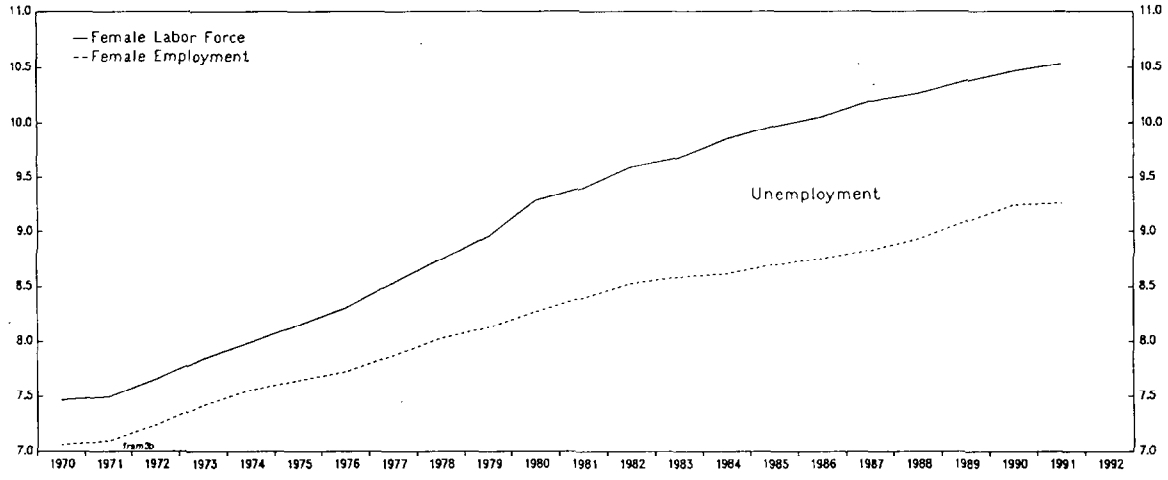
Source: OECD, Historical Statistics.

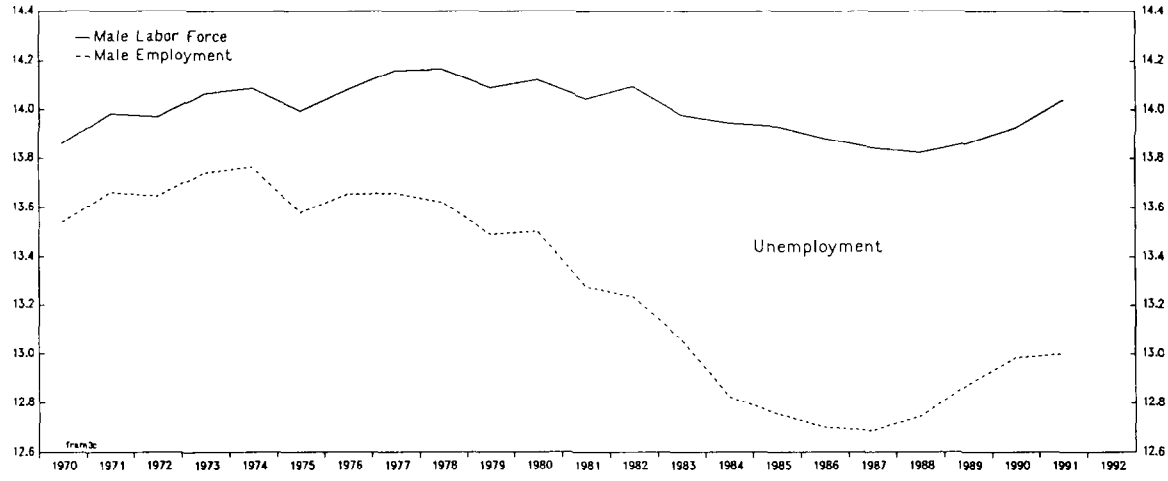
CHART 3
FRANCE

Labor Force, Employment and Unemployment

(In Millions)







Source: OECD, Historical Statistics.

Table 1. Key Labor Market Indicators
(Average annual percentage growth rates)

		1974-79	1980-90	1990	1991	1992
Population of working age	France	0.7	0.8	0.3	0.3	0.3
	EC	0.7	0.7	0.3	0.2	0.2
	OECD	1.2	1.0	0.7	0.6	0.5
Labor force	France	0.9	0.5	0.4	0.7	0.4
	EC	0.7	0.8	0.9	0.7	-0.2
	OECD	1.3	1.3	1.1	0.8	0.7
Employment	France	0.3	0.2	1.0	0.1	-0.5
	EC	0.2	0.6	1.6	0.3	-1.2
	OECD	1.1	1.2	1.3	0.0	-0.1
GDP Growth	France	2.8	2.1	2.2	0.7	1.3
	EC	2.5	2.2	2.9	1.4	1.1
	OECD	2.7	2.7	2.5	0.7	1.5

Source: OECD, Historical Statistics

2. Composition of unemployment

Although the trend rise in unemployment can be observed in many other industrial countries, two factors characterize the French experience: unemployment peaked somewhat later than in the other G7 countries and the subsequent decline was not as sharp (Chart 1). This persistence suggests structural imbalances in the labor market that are also reflected in the composition of unemployment:

a. Youth unemployment

The youth unemployment rate has been consistently higher than the total unemployment rate and more sensitive to economic downturn (Chart 4). In general, one would expect the youth unemployment rate to be above the total unemployment rate as the young have lower human capital. Labor market practices such as "last-in, first-out" also reinforce youth unemployment and explain its sensitivity to economic conditions. Furthermore, there is some evidence that wage bargainers are primarily concerned with the interests of those who are employed, i.e., the "insiders," rather than those who seek employment, the "outsiders." For example, the insiders may take advantage of high turnover costs or the uncertainties associated with employing an outsider to demand higher wages than are justified by productivity or inflation. This theory also helps to elucidate the persistence in youth unemployment. However, labor market features such as "last-in, first-out" or "insider-outsider" are not unique to France, yet youth unemployment in France is high compared to other industrial nations (Chart 5). This suggests that other more specific factors are also at work. The minimum

wage and high employer payroll taxes could have a more pronounced impact on the employment of the young (see Section III below). Furthermore, many young people are poorly qualified or lack the skills sought by employers. In 1991, the rate of unemployment among 15-24 year olds with only certificat d'études primaires (CEP) was twice as high as for those with the baccalauréat level diploma.

b. Female unemployment

Unemployment among women has been consistently above the average unemployment rate (Chart 4). There are a number of potential causes. Part-time working, especially among women, remains less developed in France than in the other G7 countries (Table 2).

Table 2. Size and Composition of Part-Time Employment, 1973 and 1992

(In percent)

	Canada	France	Germany	Italy	Japan	U.K.	U.S.
	(Part-time employment as a proportion of employment)						
1973							
Men	4.7	1.7	1.8	3.7	6.8	2.3	8.6
Women	19.4	12.9	24.4	14.0	25.1	39.1	26.8
1992							
Men	9.3	3.6	2.7	2.7	10.6	6.1	10.8
Women	25.9	24.5	34.3	10.5	34.8	44.6	25.4
	(Women's share in part-time employment)						
1973	68.4	82.3	89.0	58.3	70.0	90.9	66.0
1992	70.0	83.7	89.6	67.9	69.3	85.4	66.4

Source: OECD, Employment Outlook, 1993.

Although jobs have grown faster in the service sector--which provides substantial female employment--than the average rate of increase in employment, this rate of growth has been lower than that achieved in the United States, United Kingdom, Italy, and Japan. 1/ There is also some evidence that, for women in particular, the probability of finding a job rises as the maximum duration of benefits draws near (see Section II below).

1/ Commissariat Général du Plan (1993), pp 128-130.

CHART 4

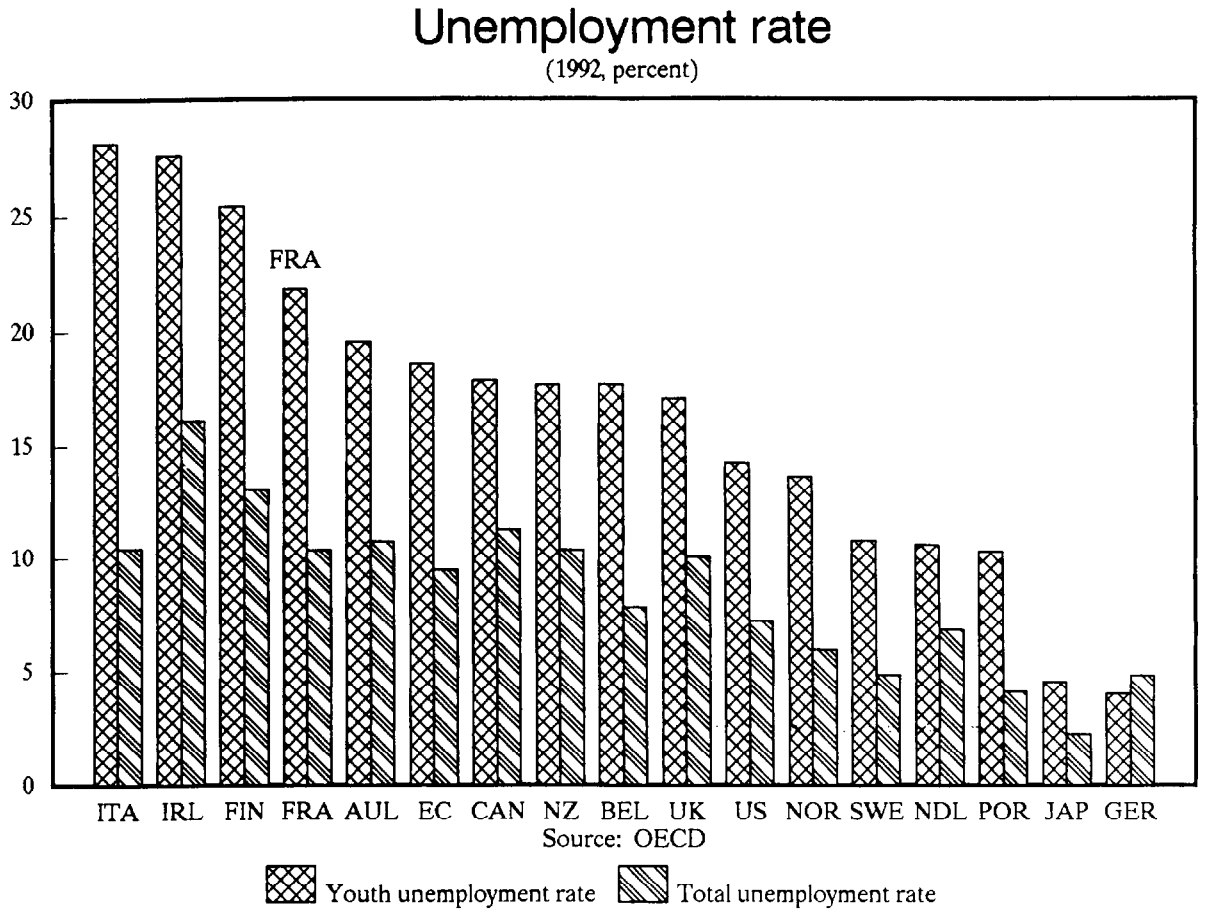
FRANCE

Unemployment Rates - Youth, Female and Male

(In Percent)

Source: INSEE.
1/February 1994.

CHART 5
FRANCE



In France, benefits are available for a longer duration than in most other industrial nations and the ratio of long-term to short-term replacement rates for women was high until January 1993, when the government introduced a new system whereby unemployment benefits decrease more rapidly over time (see sections III and IV below).

c. Long-term unemployment

About 40 percent of those who are unemployed have been out of a job for at least one year. Although this is not exceptionally high when compared to other industrial economies (Chart 6), it is high in absolute terms. There is considerable evidence that the long-term unemployed exert no pressure on wage inflation (Layard and Nickell and Jackman, 1991). Therefore, long-term unemployment could reduce the potential output of the economy through a higher natural rate of unemployment. Pissarides (1992) illustrates that human capital depreciates as the duration of unemployment increases leading to a lower probability of finding a job.

With regard to the demand side causes of long-term unemployment, employers faced with continued uncertainty regarding future orders may refrain from recruitment for long periods of time, causing the persistence of both unemployment and long-term unemployment, particularly if wages are not flexible. Labor market rigidities such as the relative generosity of long-term benefits, employment protection legislation, the minimum wage, and high employer costs are other potential contributory factors. These factors are investigated further below. The adoption of a number of job creation and training programs makes the study of long-term unemployment even more complex. Cases and Lollivier (1993) characterize the French labor market as being divided into three segments: unemployment, regular employment and marginal employment. Many job schemes fall into the last category and there are flows between all three segments. Transition from long-term unemployment to labor market schemes and vice versa could lead to recurrent spells of unemployment rather than to long-term unemployment.

d. Non-employment rate

Another useful concept in comparing the labor market experience of different countries is the "non-employment rate," 1/ which combines the effects of high unemployment and low participation in the labor force. In addition to the high rate of unemployment, France has a low participation rate, particularly among men (Chart 7). The participation rate in France drops dramatically for those aged 56 and above when compared to the average

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1/ The non-employment rate is defined as:

$$\frac{U+(PW-U-E)}{PW} = 1 - \frac{E}{PW}$$

where U is unemployment, E is employment and PW is population of working age.

of EC countries (Table 3) as a consequence of generous early retirement schemes. 1/

Table 3. Participation Rates by Age Group, 1991

(In percentages)

	France			EC Average		
	Males	Females	Total	Males	Females	Total
14-19 years	13.2	10.1	11.7	28.5	24.3	26.4
20-24 years	69.8	62.9	66.2	76.3	66.5	71.4
25-29 years	94.9	78.0	86.3	92.0	70.3	81.2
30-34 years	97.1	75.1	86.0	96.2	66.8	81.5
35-39 years	97.3	74.5	85.9	96.8	66.6	81.6
40-44 years	96.8	76.0	86.4	96.2	65.7	81.0
45-49 years	95.3	70.4	82.9	94.3	59.5	77.0
50-54 years	88.4	62.1	75.2	88.9	50.6	69.6
55-59 years	61.9	42.4	51.8	72.7	35.9	53.8
60-64 years	14.6	12.4	13.4	37.1	14.6	25.3
65-69 years	5.3	2.4	3.7	11.3	4.4	7.5
70 years & over	1.8	0.6	1.0	3.8	1.2	2.2
Total	63.7	46.2	54.5	67.5	42.6	54.6

Source: Eurostat, Labour Force Survey Results 1991.

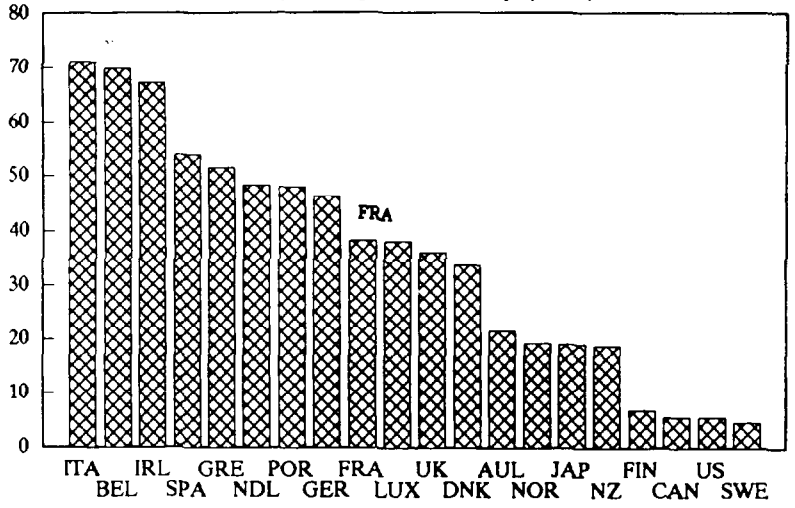
The high non-employment rate in France is more comparable to the southern European and the Benelux countries than to the other industrial countries (Chart 8). This under-utilization of labor imposes a heavy burden on government finances, through both lost tax revenue and increased social security expenditure. This burden will become increasingly serious as the proportion of the elderly in the population rises, given the need to finance pension expenditures, which operate on a pay-as-you-go basis in France. Not surprisingly, cross-country evidence suggests that the higher the non-employment rate, the higher the budgetary expenditure on the labor market (Chart 9).

1/ Those aged over 56 can obtain unemployment benefits without looking for work. If someone over 56 becomes unemployed as a result of company restructuring, he will be entitled to 65 percent of previous income or a maximum of F 12,000 per month with the employer paying 10 per cent of the cost.

CHART 6
FRANCE

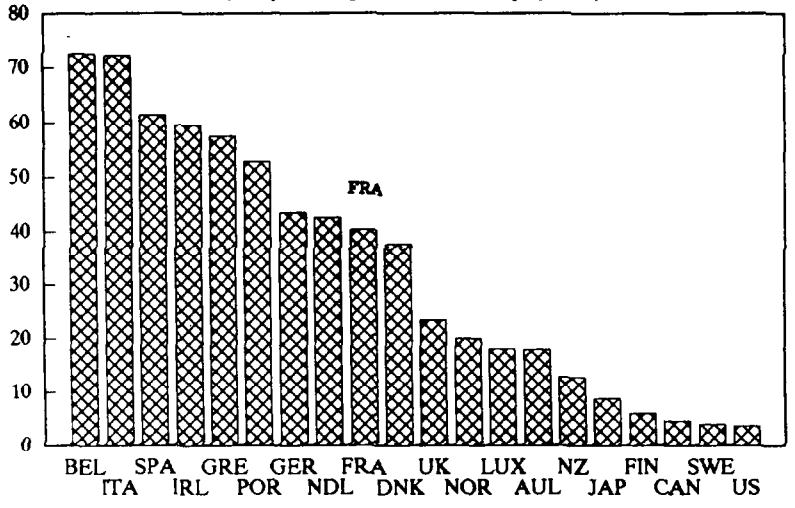
Total long-term unemployment

(as a percentage of total unemployment)



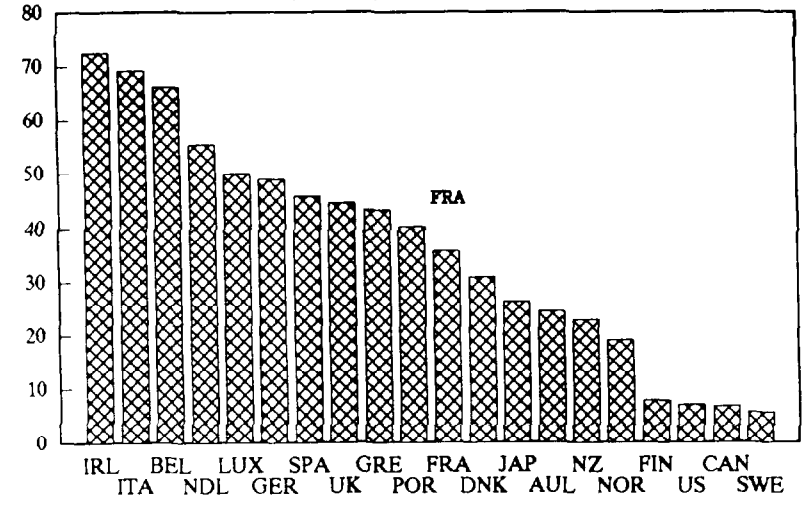
Female long-term unemployment

(as a percentage of female unemployment)



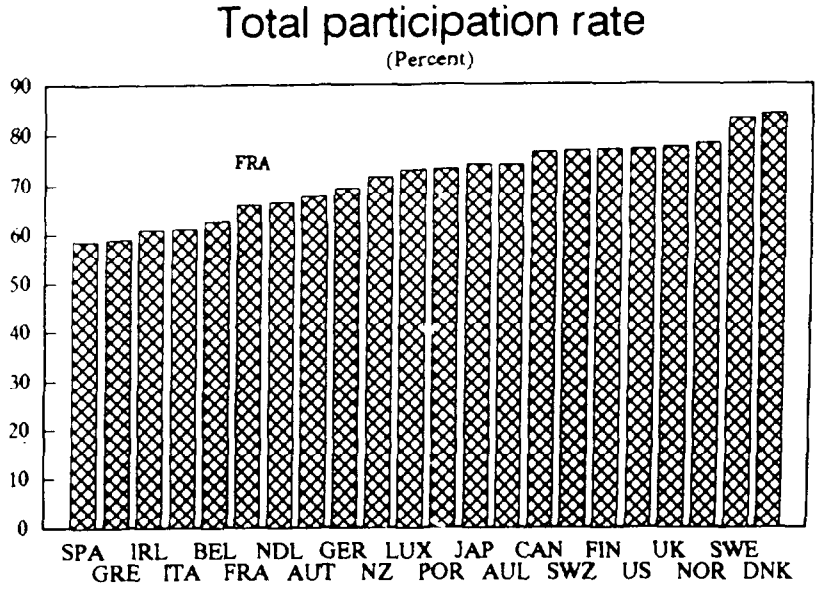
Male long-term unemployment

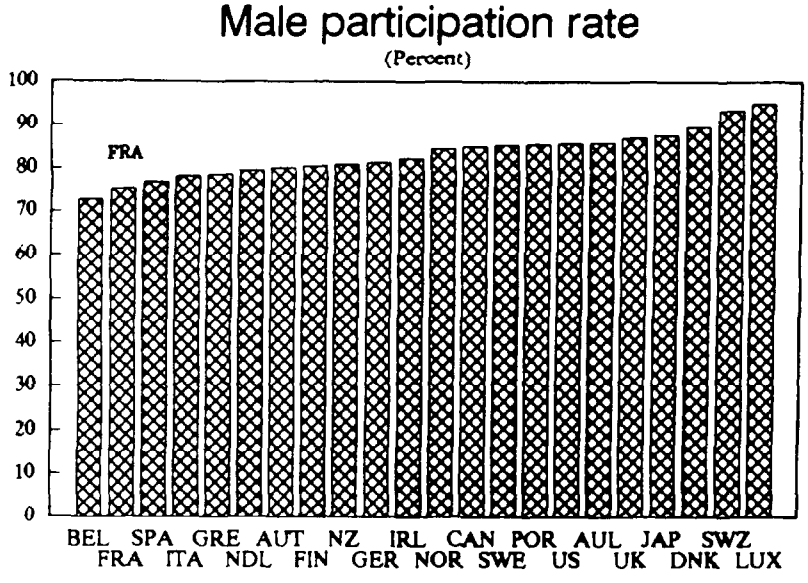
(as a percentage of male unemployment)

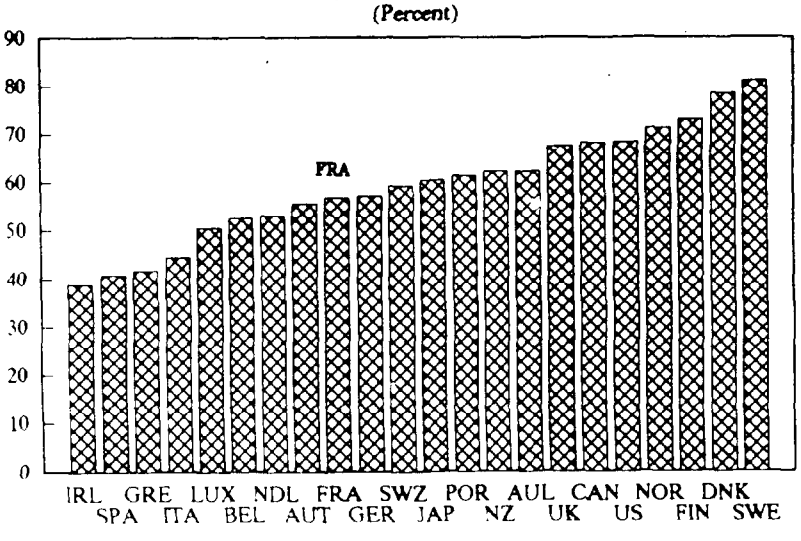


Source: OECD, Employment Outlook 1992

CHART 7
FRANCE





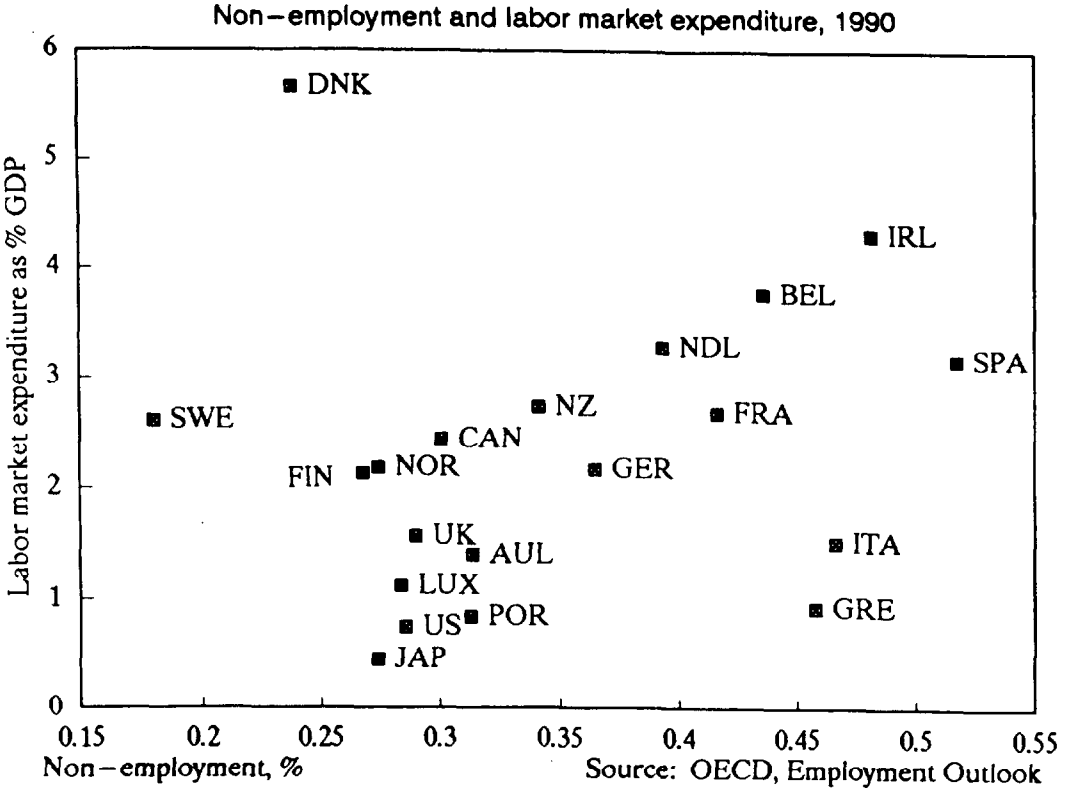


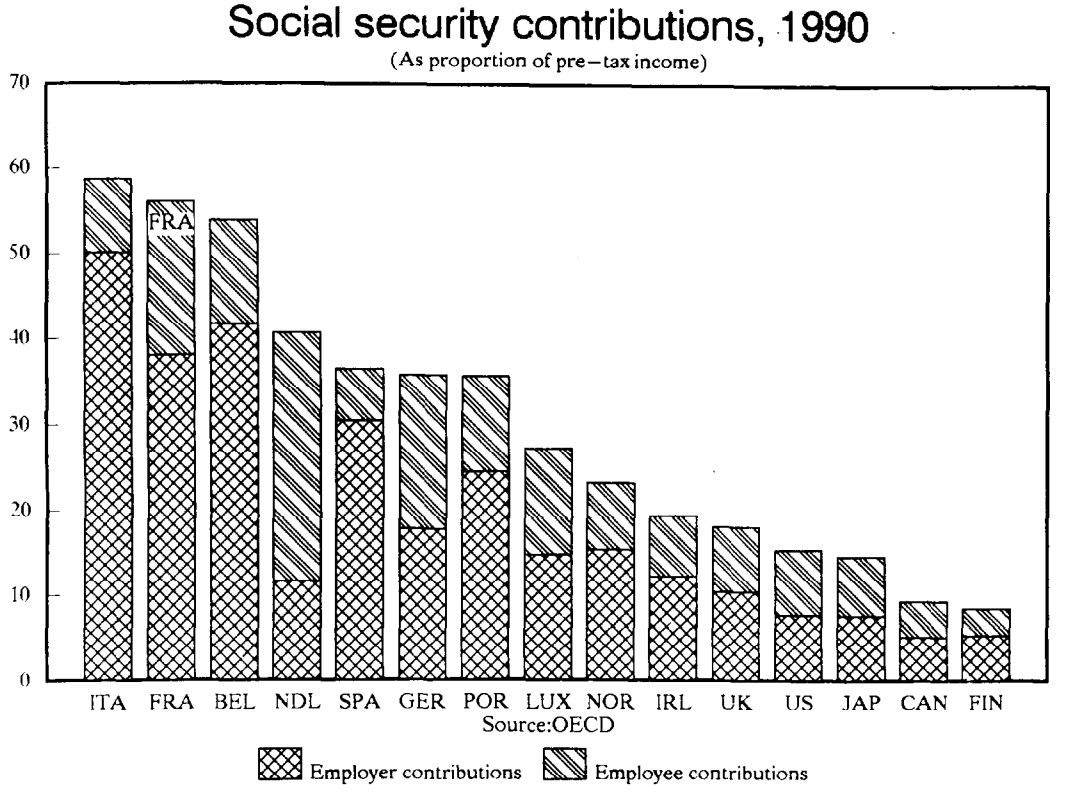
Source: OECD, Employment Outlook, 1992

CHART 8
FRANCE

Source: OECD, Employment Outlook, 1992

CHART 9
FRANCE





III. Causes of Unemployment

1. Employers' taxes

Social security contributions in France, particularly for employers, are very high. Total employee and employer contributions as a ratio to income are higher than in all other industrial countries except Italy (Chart 9, lower panel). Personal income taxes, on the other hand, are lower than in most other countries. Table 4 provides a more detailed comparison of labor costs in France and other major European countries for an unmarried worker. Gross labor costs in France, although below those in Italy, are substantially higher as a proportion of net earnings than in Germany and the United Kingdom. In fact, the gap with the latter two countries widened in the 1980s. The main contributor to this differential is employers' social security contributions, which are not only substantially higher than in Germany and the United Kingdom, but also increased significantly during the 1980s.

Table 4. European Comparison of Earnings, Direct Taxes and Social Security Contributions, as a Percentage of Net Earnings (For a Single Worker)

	Year	Italy	France	Germany	U.K.
1. Gross earnings	1979	125	125	146	142
	1989	138	132	155	139
2. Employees' contribution	1979	11	15	23	9
	1989	12	23	27	13
3. Personal income taxes	1979	14	10	23	33
	1989	26	9	28	26
4. Net earnings (1-2-3)	1979	100	100	100	100
	1989	100	100	100	100
5. Employers' contribution	1979	58	47	23	14
	1989	67	59	27	14
6. Total labor cost	1979	183	172	169	156
	1989	205	191	182	153

Source: Commissariat Général du Plan (1993).

Table 4 also shows that the contribution rates of employees are noticeably higher in France than in Italy and the United Kingdom but marginally below those in Germany. Furthermore, contributions as a ratio to net earnings increased by some fifty percent during the 1980s. Income taxes in France, on the other hand, are about one-third of those in the other three countries as a proportion of net earnings and they declined marginally during the 1980s.

From a theoretical perspective, the invariance of incidence proposition (IIP) implies that the replacement of an employer tax by an equal employee tax has no effect on the real economy, i.e., the product wage, the consumption wage and the level of employment will be unaffected (Layard et al 1991; Newell and Symons, 1987; OECD, 1990). However, this result may not apply--at least in the short-run--if there are market imperfections, for instance, if wages are above market clearing values and adjust slowly, or wage negotiators only care about the "insiders". Even if the IIP holds, differences in tax liability could alter the allocation of resources. For example, employer taxes apply only to the wage whereas personal or corporate income taxes also apply to income from capital. A switch from income taxes to employer taxes implies an increase in the overall rate of taxation on employment and a decrease in capital taxation, which may lead to a substitution of capital for labor. Similarly, personal income taxes are usually progressive whereas social security taxes are not. A switch from one to the other could lead to changes in the total tax bill for many individuals and firms and affect labor supply or demand decisions.

Empirical studies (Newell and Symons, 1987; OECD, 1990) suggest that even when using a model where the IIP holds in the long-run, a cut in employer taxes and an equivalent rise in employee taxes could reduce unemployment in the short-run. The short-run effects may last for several years because of lags in the adjustment process (OECD, 1986). Cotis and Loufir (1990) find support for IIP in France (see below). Other authors have found that the tax wedge has a long-run effect on unemployment in France (Bean et al, 1986). We investigate this issue further using time-series data for France in Section IV. Table 5 provides some cross-section evidence on the impact of employer taxes on the composition of unemployment in the industrial countries.

Table 5. Employer Taxes, Youth and Long-Term Unemployment

OLS cross-section regressions for 15 OECD countries 1/
(t-ratios in parentheses)

$$(UY/U) = 1.7 + \underset{(2.03)}{0.01\ CS_E}$$

R^2=0.27

$$LTU = 17.5 + \underset{(2.14)}{0.97\ CS_E}$$

R^2=0.26

Where:
UY/U= ratio of youth to total unemployment rate
CS_E = employers' social security contributions
LTU = percentage of unemployed who have been unemployed for more than a year

The first equation gives the result of regressing the ratio of youth to total unemployment on the rate of employers' social security contributions using cross-section data for 15 OECD countries. The results indicate a significant positive correlation between the two variables. The coefficient on employers' contributions indicates that if they are 1 percentage point higher in one country than in another, then the ratio of youth to total unemployment is likely to be 1 percentage point higher. In France, employer contributions are about 20 percentage points higher than the sample average implying a similar gap for the percentage of youth unemployment. The second regression presents results for long-term unemployment which are very similar; they indicate that higher employer contributions are associated with higher long-term unemployment. When the same regressions were performed for men and women separately, the coefficients were higher in the case of women.

Admittedly, these results do not capture any theoretical relationship. However, they do suggest that high employer taxes are associated with a high incidence of youth and long-term unemployment, which are symptoms of structural unemployment. The results imply that increases in employers' contributions have not been passed on to employees through wage reductions.

1/ The 15 countries in the data set are: Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Japan, The Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States.

2. The minimum wage (SMIC)

France has had an institutional minimum wage since 1950; the current SMIC (salaire minimum interprofessionnel de croissance) was introduced in 1970. There are three mechanisms for revising the SMIC: (a) a rise of 2 percent or more in the consumer price index automatically triggers an equivalent rise in the SMIC; (b) on 1 July every year the SMIC is revised by at least half of the increase in the real hourly wages in industry; and (c) the government can raise the SMIC at its discretion. 1/ These mechanisms have led to a steady rise in the real value of the SMIC.

The latest report on the SMIC by Ministère du Travail shows that the number of people being paid the SMIC has risen over the last five years. 2/ In 1992, 8.6 percent of workers or just under 2 million people received the minimum wage, with the percentage among women being much higher (Table 6). The proportion of individuals earning the SMIC is particularly high for those who are under 26 years old: 35.5 percent of wage earners under 26 were paid the SMIC in 1992. The fact that a large number of young workers, and a growing number of people in general, are paid the SMIC suggests that it is a significant labor market factor which may have an impact on employment.

1/ Following the election of President Mitterand, the SMIC was raised by 10 percent in May 1981.

2/ In fact these numbers are an under-estimate since the survey carried out by the Ministère du Travail does not cover firms with less than 10 employees nor those in agriculture, coal, public transport and utilities.

Table 6. Proportion of Wage and Salary Earners in Establishments Employing More Than Ten Workers in Industry, Commerce, and Services Covered by the SMIC, 1972-92 1/

	Males	Females	Total
1972	1.8	4.6	2.7
1976	3.6	8.4	5.1
1979	3.0	6.2	4.0
1981	5.1	13.9	8.0
1983 2/	4.6	10.4	6.6
1985	6.2	16.2	9.7
1987	5.1	12.6	7.8
1989	5.2	13.9	8.2
1992	5.1	14.1	8.6

Source: Bazen and Martin (1991) and Ministère du Travail, de l'Emploi et de la Formation Professionnelle.

1/ The data refer to July of each year. They cover all workers whose hourly wage is less than the new hourly SMIC rate which applies from 1 July of each year.

2/ New series from 1983 on.

Empirical studies on the effect of the SMIC on employment have not been conclusive. Bazen and Martin (1991) find that "increases in the real value of the SMIC have exerted significant upward pressure on real youth earnings." However, they are unable to show conclusively that increases in real labor costs have had a negative impact on youth employment, although they believe this to be the case. Their results do suggest that moderating the relative rate of increase in the SMIC would have a favorable impact on youth employment. Chart 10 also suggests a correlation between the relative minimum wage and youth unemployment. In response to high youth unemployment, the government has introduced a number of labor market measures (Chart 10, lower panel). Many labor market scheme are targeted at the young (see Section V, below). Given the large increase in the number of places on employment programs between 1984 and 1987, it is difficult to assess whether the fall in youth unemployment after 1984 was due to the fall in the relative value of the SMIC or an increase in labor market programs. It is likely that both played a role.

By adding to wage rigidity--in particular, the rigidity of relative wages by limiting wage differentials--the SMIC has several implications. 1/ To the extent that the productivity of the less skilled and less qualified is below that justified by the SMIC, they are likely to suffer unemployment. This no doubt helps explain France's high rate of youth unemployment, and also the persistence of unemployment. The SMIC may also be an obstacle to regional labor mobility, as it is uniform across the country and thus does not reflect regional differences in the cost of living which imply different real values for the SMIC.

The experience of other industrial countries with a statutory minimum wage is also relevant. Empirical work in United States and Canada has concluded that the minimum wage has had a negative impact on youth employment. 2/ It is therefore instructive to compare the level of the minimum wage in France to that in other industrial countries.

The cost of employing someone at the minimum wage in France is about twice that in the United States. This is due to two factors. Firstly, the minimum wage in France is about 1.5 times that in the United States and, secondly, employers' social security contribution rates are 38 percent in France but only 7.7 percent in the United States 3/ (Table 7).

Table 7. The Minimum Wage in France and the United States, July 1992

	Monthly 4/ minimum wage (F) 5/	Cost to the employer (F)
France	5,756	7,943
U.S.	3,950	4,254

Source: Bulletin Mensuel de Statistique and U.S. Employment and Earnings.

A comparison with Belgium and the Netherlands is interesting because, unlike France, these countries have a lower minimum wage for the young than

1/ In addition to the SMIC, there is evidence of other types of wage rigidity which could also lead to higher unemployment. For example, there is evidence of "insider power" (Cahuc and al, 1990; Plassard and Tahar, 1990).

2/ See Brown (1988) for a survey of the U.S. evidence and Coe (1990) on evidence for Canada.

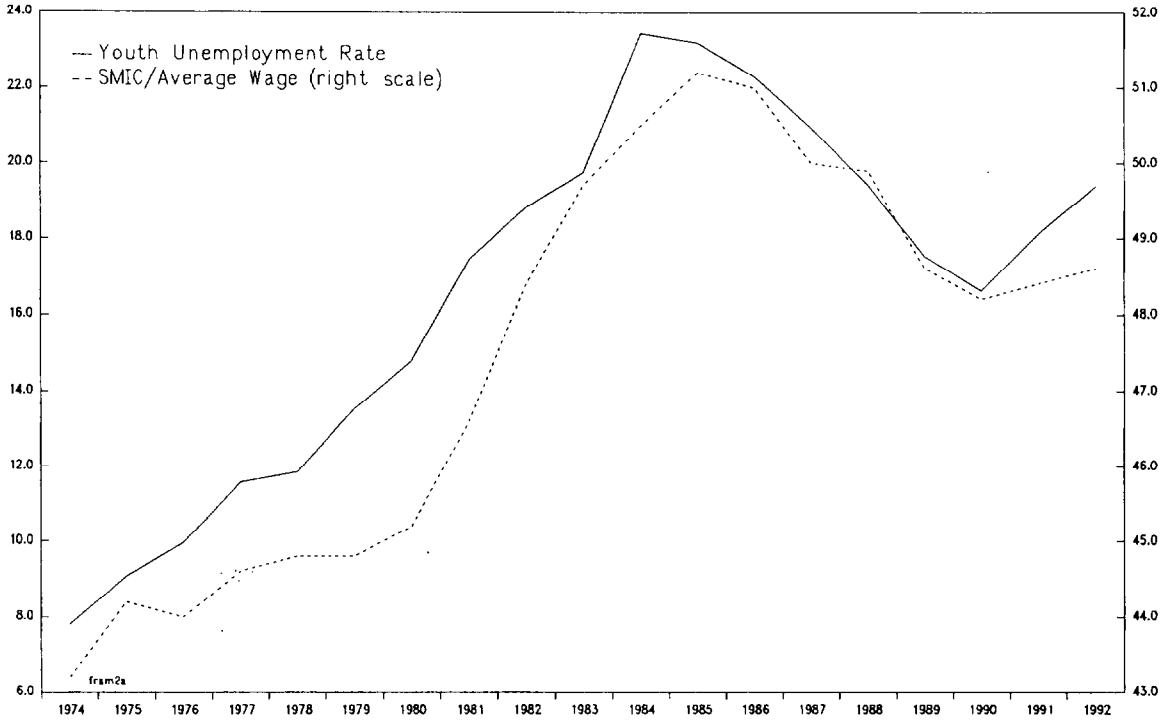
3/ Based on internationally comparable figures compiled by the OECD (1992).

4/ On the basis of working 169 hours a month.

5/ Using an exchange rate of $1 = F 5.5.

CHART 10
FRANCE

Youth Unemployment, the Relative Minimum Wage and Labor Market Programs



Sources: INSEE, OECD and staff estimates.

for other workers. In France the minimum wage, at least in theory, applies to anyone aged 18 or above. 1/ In the Netherlands the full minimum wage applies to those aged 23 and above. For those under 23, the minimum wage is reduced sharply. 2/ In Belgium the full minimum wage applies to those aged 21 and above and there are lower rates for those under 21, although the reduction is not as sharp as in the Netherlands. 3/

The existence of the youth minimum wage means that, in absolute terms, it is cheaper for an employer to employ an 18 year old in the Netherlands or Belgium than in France, although the full minimum wage is higher in the former countries (Table 8). Interestingly, the ratio of youth to total unemployment in the Netherlands is among the lowest in the industrial countries (Charts 11 and 5).

1/ In recent years the government has introduced a number of measures which reduced employers' contributions and the minimum wage for young people participating in employment schemes. These measures were re-enforced in June 93 reducing the effective minimum wage substantially when participating in special schemes (see section 5 below).

2/ The minimum wage in the Netherlands is reduced according to the following schedule:

Age	Percent of minimum wage
22	85.0
21	72.6
20	61.5
19	52.5
18	45.5
17	39.5
16	34.5
15	30.0

3/ The minimum wage in Belgium is reduced according to the following schedule:

Age	Percent of minimum wage
20	92.5
19	85.0
18	77.5
17	70.0
16	62.5

Table 8. The Minimum Wage for an 18 Year Old in France, the United States, Belgium, and the Netherlands, July 1992

	Monthly full minimum wage (F) 1/	Monthly minimum wage for an 18 year old (F)	Cost to employer of 18 year old (F)
France	5,756	5,756	7,943
U.S. 2/	3,950	3,365	3,624
Belgium	6,743	5,226	7,405
Netherlands	6,476	2,947	3,286

Source: Bulletin Mensuel de Statistique, U.S. Employment and Earnings, and K. van den Heuvel (1992).

There is, therefore, considerable evidence that the minimum wage in France is high by international standards, especially for the young. There is also some evidence that the minimum wage affects youth, if not total, unemployment. We will pursue this issue further by doing some time-series analysis of data for France in Section IV, after we have briefly considered the other potential causes of unemployment.

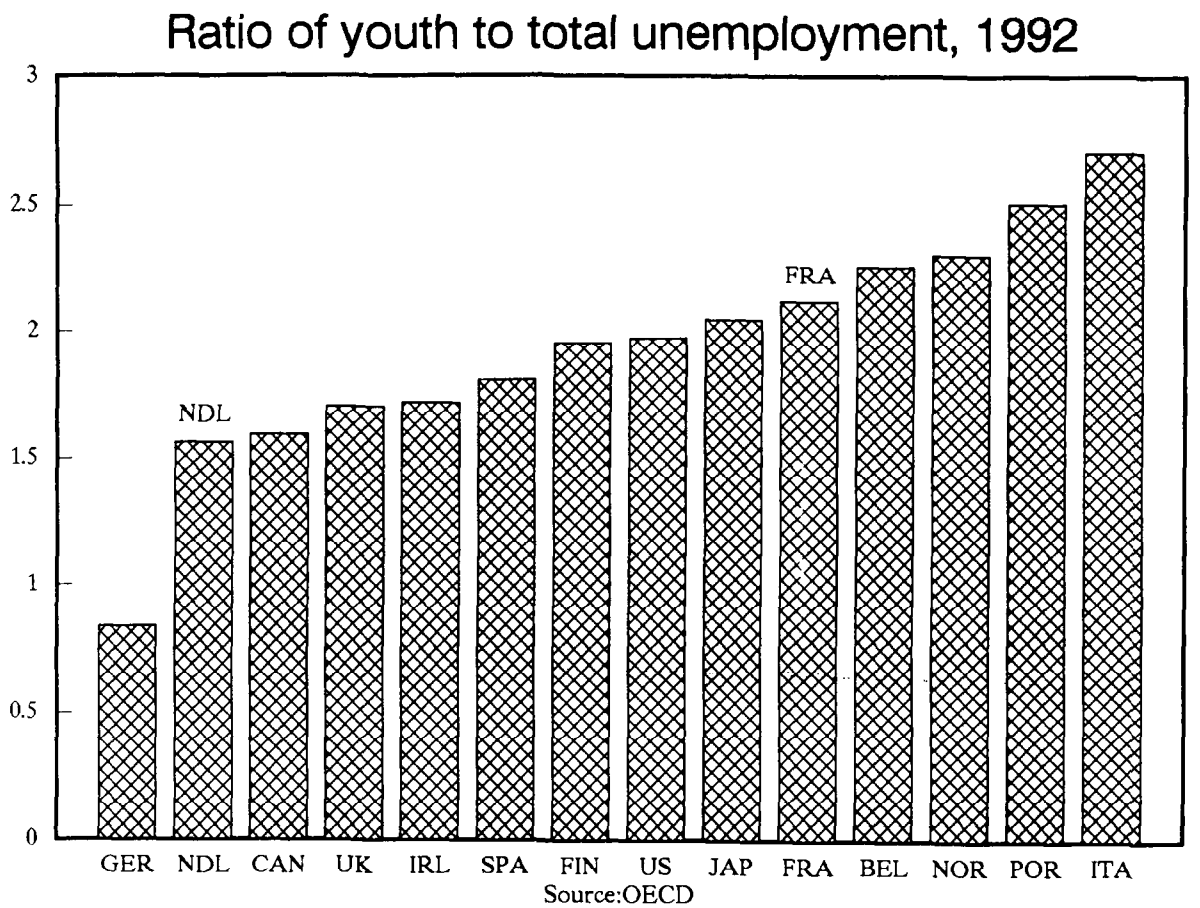
3. Generosity of benefits

Most models of wage determination imply that benefits have a significant effect on wages (Layard et al, 1991). The impact of the replacement rate (i.e. the ratio of unemployment benefits to wages) on the decision to seek employment very much depends on the individual's circumstances and is difficult to measure at an aggregate level. Besides, some countries with a high replacement rate such as Sweden and Norway have low unemployment and a high participation rate. The important issue is not so much the absolute level of benefits, or even the replacement ratio, but the incentive structure of the benefit system and the characteristics of the individual (see, for example, Schmitt and Wadsworth, 1993).

One aspect of this is the duration structure of benefits. Table 9 gives the result of regressing the proportion of long-term unemployed on the

1/ Using $1 = F 5.5 and July 1992 exchange rates for other currencies.
2/ In the U.S. there is a reduced minimum wage for 16-19 year olds which is 85 percent of the full minimum wage.

CHART 11
FRANCE



ratio of the long-term to short-term replacement rate using cross-section data for 15 OECD countries. Separate regressions were performed for men and women.

Table 9. Long-Term Unemployment and the Relative Generosity of Benefits

OLS cross-section regressions for 15 OECD countries
(t-ratios in parentheses)

Women

$$LTU = 7.10 + \underset{(2.47)}{0.60}\ RATIO$$

$R^2 = 0.32$

Men

$$LTU = 4.80 + \underset{(2.59)}{0.46}\ RATIO$$

$R^2 = 0.34$

Where:

LTU = percentage of unemployed who have been unemployed for more than a year
RATIO = the ratio of long-term to short-term replacement rates times 100

Table 9 shows that there is a significant positive relationship between long-term unemployment and the generosity of long-term relative to short-term unemployment benefits for both men and women. The equation for men suggests that if the ratio of long-term to short-term unemployment benefits is 1 percentage point higher, then long-term unemployment will be 0.46 percentage points higher. Interestingly, the corresponding figure for women is 0.60 percentage points. In the data-set, which corresponds to 1991, the ratio of short-term to long-term replacement rates for France is 17 percentage points higher than the sample average for men, and 22 percentage points higher for women. The introduction of the new unemployment benefits system will reduce these ratios (see Section V).

There are other features of the benefits system that may also have an impact on unemployment. According to the EC Commission, unemployment benefits were paid to 43 percent of those without work in France in 1989, which is substantially above the EC average of 30 percent. One cause of this phenomenon could be the duration for which unemployment benefits are available in France. Table 10 provides data on the maximum duration of benefits for the OECD countries. Benefit duration in France is among the longest in the OECD countries. Only in Belgium, Denmark and the Netherlands are benefits available for a longer period.

Table 10. Maximum Duration of Unemployment Benefits and Replacement Rates

	1981	1989
EC countries		
Belgium	Indefinite	Indefinite
Denmark	130 weeks	130 weeks
France	156 weeks	130 weeks
Germany	52 weeks	52 weeks
Ireland	65 weeks	65 weeks
Italy	26 weeks	26 weeks
Netherlands	...	156 weeks
Spain	104 weeks	104 weeks
United Kingdom	52 weeks	52 weeks
Non-EC European countries		
Austria	30 weeks	30 weeks
Finland	100 weeks	100 weeks
Norway	40 weeks	80 weeks
Sweden	60 weeks	60 weeks
Switzerland	36 weeks	50 weeks
Non-European OECD countries		
Canada	50 weeks	50 weeks
Japan	26 weeks	30 weeks
United States	39 weeks	26 weeks

Sources: OECD Employment Outlook, 1993

4. Institutional factors

Structural unemployment is also affected by the benefits administration system, hiring and firing regulations, and other institutional factors that could discourage employers from taking on new workers or the unemployed from searching for jobs. A few of these factors are examined in this section.

a. Unemployment benefit administration

France does not seem out of line with regard to the minimum waiting period before the receipt of benefits; as in many other industrial countries, there is no minimum period. A number of countries have a minimum waiting period of a few days. However, if a person has left his job voluntarily, he would be completely disqualified from receiving benefits in France, whereas in many countries there is a waiting period of several weeks, but not a complete disqualification (Table 11).

Regulations concerning signing-on in France are rather liberal: confirmation of unemployment status is done on a monthly basis by post (Table 12). However, France does have a system of intensified interviews by the placement and benefit administration services (Table 13).

b. Hiring and firing legislation

The 1986 work dismissal legislation in France requires that those being dismissed are given one to two months' written notice of dismissal and informed in writing of the reasons for their dismissal. At the same time this legislation removed the need to seek the permission of the Labor Ministry for collective dismissals. Other legislation in 1989 obliged companies to prove the cause of dismissal. The law in France also requires that workers be paid up to a maximum of one and a half months' salary as severance pay. Though the legal restrictions on dismissal in France are less strict than those in the southern European countries, they are more strict than those outside Europe, particularly in the United States.

Barriers to non-traditional forms of work such as part-time or temporary work are often viewed as a form of rigidity in the labor market. We noted above that part-time working is less developed in France than in many other industrial countries (Table 2). In order to assist part-time working, the government passed legislation in December 1992 exempting employers from 50 percent of social security contributions if they took on part-time workers.

The proportion of people working on temporary contracts in France has risen continuously over the last decade from 3.3 percent of employment in 1983 to 10.2 percent in 1991 (Table 14). However, the regulations governing fixed term contracts remain more strict in France than in most other industrial countries (Table 14). For example, in some circumstances the use of temporary contracts is restricted; there is a legal maximum duration for fixed term contracts; and employees are entitled to termination benefits.

Table 11. Periods for Which No Insurance Benefits Are Paid at the Start of an Unemployment Spell

	Minimum waiting period (for all claims)	Waiting period if the last job was quit voluntarily
Australia	7 days	2-12 weeks
Austria	none	4 weeks
Belgium	none	1-26 weeks
Canada	2 weeks	6 weeks
Denmark	none	5 weeks
Finland	5 days	6 weeks
France	none	complete disqualification
Germany	none	12 weeks
Greece	6 days	complete disqualification
Ireland	3 days	6 weeks
Japan	7 days	1-3 months
Netherlands	none	none
New Zealand	7-14 days	6 weeks
Norway	3 days	4 weeks
Portugal	none	complete disqualification
Spain	none	complete disqualification
Sweden	none	4-10 weeks
Switzerland	5-20 days	...
United Kingdom	3 days	1-26 weeks
United States	1 week	complete disqualification

Source: OECD, Employment Outlook 1991.

Table 12. Signing-On and Other Regular Reporting by Benefit Claimants

Signing-on in Person		Confirmation of unemployed status by postal procedure	
Australia	Every 2 weeks	France	Monthly
Belgium	Every day	Greece	Monthly
Denmark	Every 2-3 months	Netherlands	Maximum 3 months
Japan	Every 4 weeks	United States	Every one or two weeks
Portugal	Monthly		
Spain	Every 3 months	No regular procedure	
Switzerland	3 times a week		
		Finland	
		Germany	
		Sweden	

Source: OECD, Employment Outlook 1991.

Table 13. Scheduling of Intensified Interviews by Unemployment Duration

	Scheduling of intensified interviews
Australia	Duration of more than 2 years
Denmark	Every 3 months
France	4th and 13th month of unemployment (employment placement), 14th month (benefit administration)
Germany	After at least a year
Netherlands	Reorientation interviews after 3 years of unemployment
Sweden	Unemployed over 6 months given priority
United Kingdom	At 6 months and every 6 months thereafter
New Zealand	At 6 months

Source: OECD, Employment Outlook 1991.

Table 14. Temporary Workers as a Percentage of Total Dependent Employment, 1983-91

	1983	1988	1991
Australia	...	18.7	19.7
Belgium	5.4	5.0	5.1
Denmark	...	11.5	11.9
Finland	11.1	...	13.1
France	3.3	7.8	10.2
Germany	...	11.4	9.5
Greece	16.3	17.6	14.7
Ireland	6.2	9.1	8.3
Italy	6.6	5.8	5.4
Japan	10.3	10.7	10.5
Luxembourg	3.2	3.7	3.3
Netherlands	5.8	8.7	7.7
Portugal	...	18.5	16.5
Spain	...	22.4	32.2
Turkey	...	7.2	6.6
United Kingdom	5.5	6.0	5.3

Source: OECD, Employment Outlook, 1993.

Temporary Work: Fixed-Term Contract Regulations and Requirements, 1990

Degree of government regulations	Contract regulation	Restrictions	Maximum duration 1/	Renewable regulation 2/	Termination benefits
Minimum					
Austria	Y	N	N	Y	N
Denmark	N	N	N	Y	N
Ireland	N	N	N	Y	N
U.K.	N	N	N	Y	N
Moderate					
Belgium	Y	N	N	N	N
Germany	Y	Y	18	N	N
Greece	Y	Y	N	2	N
Netherlands	Y	N	N	Y	N
Sweden	Y	Y	N	1	N
Severe					
France	Y	Y	24	2	Y
Italy	Y	Y	6	N	Y
Luxembourg	Y	Y	24	2	N
Portugal	Y	Y	36	2	Y
Spain	Y	Y	36	Y	Y

Source: OECD, Employment Outlook, 1993.

Y = Yes; N = No.

1/ Maximum duration in months.

2/ Possibility of renewal and the number of times a contract may be renewed.

The barriers to temporary work have to be considered in conjunction with the constraints on permanent employment such as employer taxes or hiring and firing regulations. If the regulations governing permanent employment were not rigid then employers would make use of temporary contracts only to the extent that they help in adjusting to changes in demand. However, the existence of barriers to permanent employment would encourage greater use of temporary contracts. Therefore, given the existence of barriers to permanent employment in France and the fact that the regulations governing temporary work are more strict than in most other countries, it is difficult to argue that the rise in the proportion of temporary workers in France is a sign of enhanced labor market flexibility.

Another potential constraint on hiring non-temporary staff in France is that the employment agency, ANPE (Agence nationale pour l'emploi), currently has a monopoly in placing non-temporary staff. This was originally enacted to prevent the exploitation of the unemployed, but it is no longer enforced. Firms regularly employ outside the ANPE. Such legal restrictions also exist in a number of other European countries (Table 15). Even though this legislation is not currently enforced, it could act as a disincentive to private firms considering entering the placement market if they fear that the legislation may be invoked in the future.

5. Mismatch

Evidence on the mismatch between the skills held by workers and those demanded by employers is rather difficult to assemble. For example, indicators based on unemployment by occupation only consider the supply side of the market, and since skills are defined on the basis of the last job held, they exclude all the unemployed without previous experience.

Data on the characteristics of the unemployed suggest some degree of mismatch. Youth unemployment is highest among those with the least qualifications (OECD, 1992b). The long-term unemployed tend to have lower educational attainment than average (Bonnal and Fougère, 1990) and are concentrated in the least qualified occupations (Caracosta et al, 1991). As for regional mismatch, both the uniformity of the SMIC across the country and the high taxation of property transfers are hindrances to regional mobility.

Using time-series measures of mismatch based on the distribution of vacancies and unemployment by industry and occupation, Jackman and Roper (1987) and Jackman, Layard and Savouri (1991) argue that mismatch in France, and indeed in most of Europe, did not increase markedly during the 1980s. However, Entrof (1993) illustrates that time-series measures of mismatch may lead to the wrong conclusions since these measures are biased downwards when unemployment is rising. Entrof also presents some micro data which suggest that regional and occupational mobility declined in Europe during 1980s.

Table 15. Legal Constraints on Methods of Filling Vacancies

	Requirements for notification of vacancies to the public employment service	Legality of profit-making employment placement agencies
Australia	No requirement	Permitted
Austria	No requirement	Banned
Belgium	All vacancies for external candidates	Temporary work agencies only are permitted
Canada	No requirement	Permitted
Denmark	No requirement	Banned
Finland	All vacancies	Banned
France	All vacancies for external candidates	Temporary work agencies only are permitted
Germany	No requirement	Temporary work agencies only are permitted
Greece	All vacancies	Banned
Ireland	No requirement	Permitted
Italy	...	Banned
Netherlands	No requirement	Permitted
Norway	All vacancies	Temporary work agencies are often permitted
Portugal	No requirement	Permitted
Spain	All vacancies	Banned
Sweden	All vacancies for external candidates	Banned
Switzerland	No requirement	Permitted
United Kingdom	No requirement	Permitted
United States	No requirement	Permitted

Source: OECD, Employment Outlook, 1991.

A simple measure of mismatch based on the variance of unemployment 1/ indicates that in France mismatch increased during the 1980s. For example, regional mismatch increased from 1.27 percent in 1982 to 1.88 percent in 1990. However, regional mismatch fell to 1.48 percent in 1992 because the rate of increase in unemployment was higher in regions with lower unemployment. 2/ The same picture emerges when considering unemployment by professional status; because unemployment has risen sharply among white collar workers (who had a relatively low unemployment rate), mismatch falls from 12.5 percent in 1990 to 11.9 percent in 1992.

Chart 12 depicts a more formal measure of mismatch, the unemployment-vacancy (UV) ratio (or Beveridge curve), for the period 1974-92. An outward shift of the curve seems to have occurred: between 1978 and 1983 the same ratio of vacancies to the labor force was coupled with a higher unemployment rate than before. During the period 1984-87, unemployment rose while vacancies were on the rise, albeit modestly. This behavior is indicative of a small increase in mismatch. 3/

France spends 2.7 percent of its GDP on the labor market: the average for the OECD is 2 percent and for the G7, excluding France, 1.1 percent. However, France spends much less than most other industrial countries on active labor market measures such as training and more on passive measures such as unemployment compensation (Chart 12, lower panel). Only the former are likely to alleviate labor market mismatch.

IV. Causes of Unemployment - Time-Series Evidence

This section presents a time series econometric model of the determinants of the NAIRU (non-accelerating-inflation rate of unemployment) or the natural rate of unemployment. The primary interest here is not to estimate a numerical value for the NAIRU but to identify a set of policy instruments that could be used to reduce it.

1. The model

To understand the causes of unemployment in Britain, Layard and Nickell (1986), in an influential study, constructed an empirical model consisting

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1/ This is defined as $1/2\ VAR(U_i/U)$.

2/ For example, unemployment rate in Yvelines (Ile-de France) rose from 4.9 to 6.2 percent, a rise of 27 percent; whereas it rose from 13.5 percent to 15.5 percent in Hérault in Languedoc-Roussillon, a rise of 15 percent.

3/ Bismut (1982) illustrates that there was a significant shift of the Beveridge curve after the two oil shocks. There is no evidence of such instability during the 1980s. However, the flatness of the UV curve during 1974-92 period and its upward slope during 1984-87 point to a small increase in mismatch.

of equations for prices, wages, employment, and the trade balance. Here we estimate a simplified version of their model which consists of two equations: a price equation and a wage equation. In this model firms are assumed to operate in an imperfectly competitive environment setting their prices on the basis of cost and demand. A key feature of the model is that wages are influenced by "pressure variables" such as those reviewed in the last section, for example, mismatch, the minimum wage, generosity of benefits, import prices. If increases in the wage pressure variables lead to higher real wages, then unemployment would have to rise for price inflation to be kept in check. More formally, the model assumes that stable inflation requires consistency between two concepts:

(i) the "target" real wage: firms and workers bargain about nominal wages as a mark-up on expected value-added prices;
w*=target(w-p), 1/ and;
(ii) the "feasible" real wage: in an imperfectly competitive market the firms are thought of as setting value-added prices as a mark-up on wages;
p*=feasible(p-w).

The economic variable which brings about this consistency in the long-run is unemployment (Layard et al, 1991).

The model is given below in equations (1)-(4). Since we are interested in the NAIRU, which is the long-run equilibrium concept for the unemployment rate, we have separated the long-run relationships from the dynamic ones. This is also desirable from an estimation point of view (Wren-Lewis, 1990). Equations (1) and (2) give the long-run wage and price equations, (3) and (4) give the dynamic framework for wages and prices.

$$w^* = pr + \alpha_1 U + \alpha_2 Z_w + \alpha_3 (pm - p) \quad (1)$$
$$p^* = \beta_1 (y_d - \bar{y}) + \beta_2 Z_p - pr \quad (2)$$
$$w = w^* + p + \theta_1(L)\,\Delta w - \theta_2(L)\,\Delta p + \theta_3(L) Dw \quad (3)$$
$$p = p^* + w + \phi_1(L)\,\Delta p - \phi_2(L)\,\Delta w + \phi_3(L) Dp \quad (4)$$

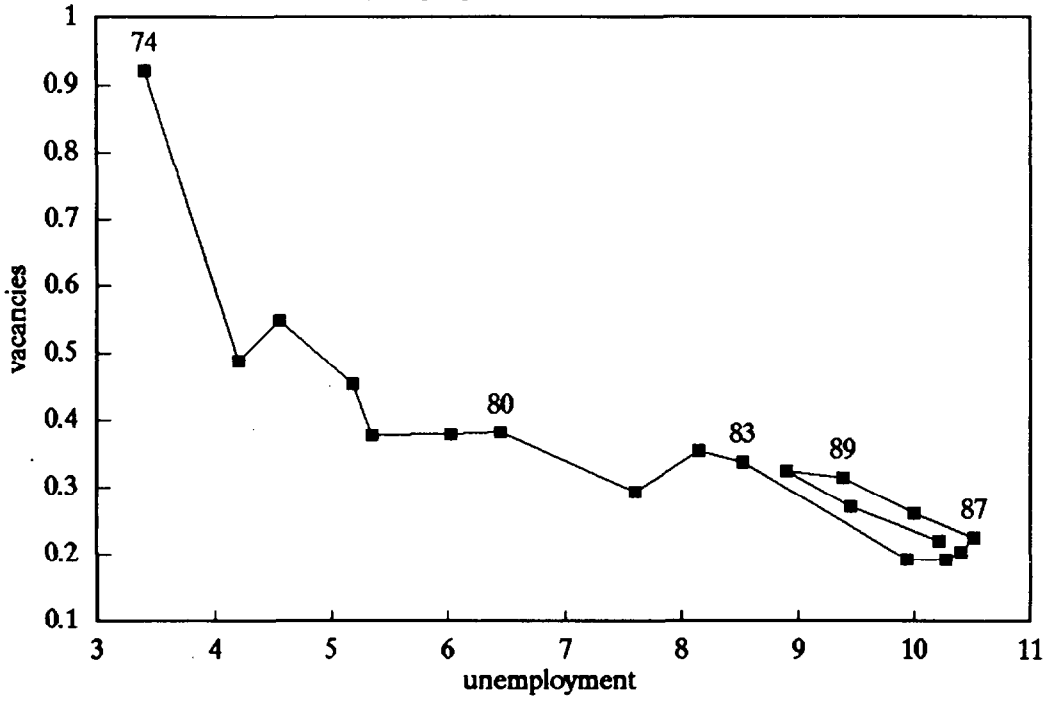
where w^* = target real wage (i.e., target (w - p))
p^* = feasible real wage (i.e., feasible (p - w)), w = nominal hourly earnings, pr = productivity or unit labor costs, p = output prices, U = unemployment rate, Pm = import prices, $(y_d - \bar{y})$ = actual demand relative to potential output, Z_w = other wage pressure variables, Z_p = other variables affecting firms' margin, D_w, D_p = other factors affecting the dynamics of wages and prices and Δ is the difference operator. All lower case variables are logged. θ and ϕ are polynomials in the lag operator L and have both positive and negative powers of L, with forward terms appearing as expectations. It is also assumed that polynomials are such that the target real wage is independent of the rate of inflation, i.e., dynamic homogeneity holds.

1/ w and p are in logs.

CHART 12
FRANCE

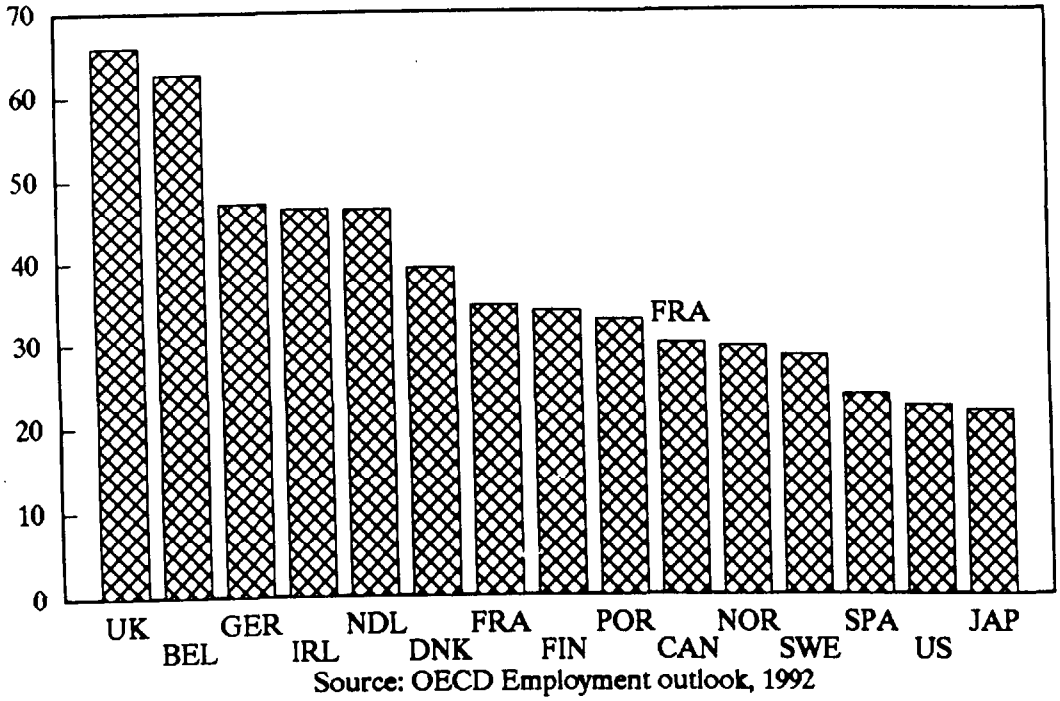
vacancies and unemployment, 1974–92

(as a proportion of the labor force)



Share of active labor market expenditure

(as a percentage of total labor market expenditure)



Source: OECD Employment outlook, 1992

Combining (3) and (4) gives:

$$[\theta_2(L) - \phi_1(L)]\,\Delta p = w^* + p^* + [\theta_1(L) - \phi_2(L)]\,\Delta w + [\theta_3(L)Dw + \phi_3(L)Dp] \qquad (5)$$

The left-hand side of (5) is a polynomial in changes in prices. The right-hand side of (5) can be regarded as a measure of inflationary pressure, which is made up of three elements: i) $w^* + p^*$, the difference between the target real wage and the feasible real wage; ii) a polynomial in the dynamics of wage contracts; and iii) other short-run influences on wages and prices. The first element, $w^* + p^*$, can be derived from combining (1) and (2)

$$w^* + p^* = \alpha_1 U + \beta_1(y_d - \bar{y}) + \alpha_2 Z_w + \beta_2 Z_p + \alpha_3(pm - p) \qquad (6)$$

In a steady state where inflation is constant, (5) implies that $w^* + p^* = 0$. Therefore (6) becomes a long-run relationship between the NAIRU, the level of actual demand relative to potential, $(yd - \bar{y})$, Z_w, Z_p, and import prices. For a given level of demand, (6) would determine the long-run influences on NAIRU.

2. The results

Because we are interested in estimating long-run relationships, an obvious way forward is to employ cointegration techniques. 1/ The basic idea of cointegration is that two or more variables may be regarded as defining a long-run equilibrium relationship if they move closely together in the long run, even though they may drift apart in the short run. This long-run relationship is referred to as a cointegrating vector. Because there is a long-run relationship between the variables, a regression containing all the variables of a cointegrating vector will have a stationary error term, even if none of the variables taken alone is stationary.

We have directly estimated the long-run relationships (1) and (2) above using the Johansen procedure and quarterly data for the period

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1/ Cuthbertson, Hall, and Taylor (1992) presents a survey of cointegration.

1971:I-1992:IV. 1/ The test statistics and the estimated cointegrating vectors from the Johansen procedure are reported in Appendix I. The cointegration tests reveal the following unique wage and price equations:

$$w\text{-}p = pr + 0.59\ smic - 0.07\ U + 0.15\ SK + 0.12\ (pm\text{-}p) \quad (7)$$
$$p\text{-}w = -pr + 0.02\ CU + 0.26\ \rho + 0.43\ t1 \quad (8)$$

The wage equation contains U and pm-p as suggested by (1) as well as the log of the real value of the SMIC (denoted as smic) and an index of skill shortages, SK, from the EC Commission's quarterly survey of employers. 2/ The latter two represent wage pressure variables Z_w in (1). The price equation contains capacity utilization, CU, the cost of capital, ρ and the employers' tax wedge, t_1. The capacity utilization variable is a proxy for demand relative to potential output, $(y_d\text{-}y)$. This variable is available from business survey data. The cost of capital, ρ, and the employers' tax wedge, t_1, represent Z_p in equation (2) and are discussed further below. A unit coefficient on the productivity term, pr, is imposed in both equations as suggested by (1) and (2). A number of other specifications for both the target real wage and the target price markup were also tried (see below).

In the cointegrating vector for the real wage, all of the estimated coefficients have the expected signs and are of plausible magnitudes. Two of the variables, U and SK, enter not as logs but as levels. Unemployment has the expected negative effect on wages. The equation indicates that if the import price wedge rises, wage earners would resist a fall in the real consumption wage (i.e. deflated by consumer prices) by pushing up the real product wage. The other two variables, smic and SK are of policy interest. The minimum wage variable captures the downward rigidity of wages and the index of skill shortages can be viewed as a proxy for mismatch. 3/ The wage equation here is similar to that used in a paper by Blanchard and Muet (1993), however, instead of the SMIC and the SK variables they use a price

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1/ Johansen (1988) and Johansen and Juselius (1990) present a cointegration estimation methodology which is based on maximum likelihood estimates of all the cointegrating vectors in a given set of variables, and provide two likelihood ratio tests for the number of cointegrating vectors. Johansen (1988) demonstrates that the likelihood ratio tests have asymptotic distributions that are a function only of the difference between the number of variables and the number of cointegrating vectors. Therefore, in contrast with the DF and ADF tests, the Johansen likelihood ratio tests have well defined limiting distributions. Johansen and Juselius also provide a methodology for testing hypotheses about the estimated coefficients of the cointegrating vectors based on likelihood ratio tests with standard chi-squared distributions.

2/ This is defined as the percentage of firms in the survey whose output is constrained by a lack of labor.

3/ We tried the ratio of minimum wage to average wage instead of the smic variable but we were unable to obtain a cointegrating vector with the variables correctly signed.

inflation variable in the wage equation. We were unable to obtain cointegration using this formulation. The approach here has the advantage of directly identifying wage pressure variables; besides, conceptually it would be unusual to have inflation in a long-run vector.

In the cointegrating vector for prices, the estimated coefficients again have the expected signs and are of reasonable magnitudes. The coefficient of the cost of capital, ρ, and the employers' tax wedge, t_1, imply that, in the long-run, employers pass on some of the increase in their costs by reducing earnings. Both of these variables are strongly influenced by economic policy choices. We find that tax wedges have no long-run effect in the wage equation, a result similar to that obtained by Cotis and Loufir (1990). However, in our formulation the employers' tax wedge has a long-run effect on unemployment through the price equation.

A number of other variables and formulations were also tried but with no success. In the wage equation we tried other forms of mismatch; direct, indirect and the employers' tax wedge; unemployment in logs rather than as a rate and an aggregate measure of benefits. In the price equation we also tried tax wedges and changes in consumer expenditure. However, none produced plausible results.

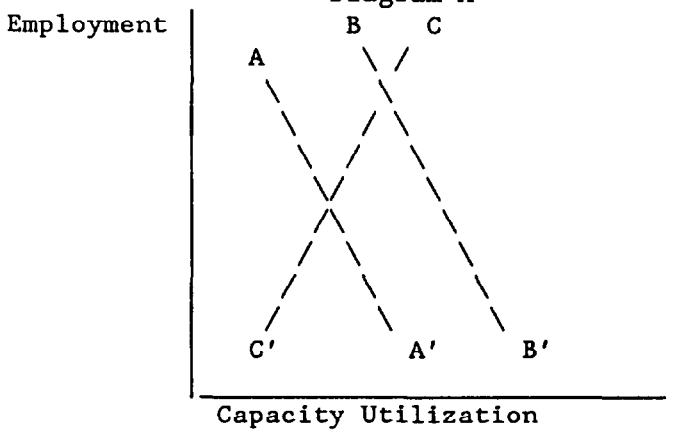
Since our primary interest is in the long-run determinants of unemployment, we shall not dwell any further on the long-run wage and price equations and proceed to obtain a long-run equation of the form given by (6) above. This can be done in the steady state by simply adding the vectors in (7) and (8) and eliminating wages and prices to obtain:

$$U - 0.3CU = 8.4\ smic + 3.7\ \rho + 6.1\ t_1 + 2.1\ SK + 1.7\ (pm-p) \qquad (9)$$

Equation (9) is not, strictly speaking, a NAIRU equation because it has a term in capacity utilization, CU. 1/ This can be illustrated using diagram A below. Equation (9) is represented by the lines AA' and BB'. The right-hand side variables in (9) will determine a schedule of values for unemployment and capacity utilization. A cut, say, in the real value of the SMIC would shift AA' to, say, BB' so that for a given level of capacity utilization employment would be higher and unemployment lower.

1/ See Wren-Lewis (1990) and Joyce and Wren-Lewis (1991) for a fuller discussion in the context of a large macroeconomic model.

Diagram A



To obtain an equation for NAIRU it is necessary to eliminate CU from (9). This can be done by estimating an upward sloping schedule, such as CC', between unemployment and capacity utilization which reflects a linkage through aggregate demand: a rise in capacity utilization would increase the demand for labor and reduce unemployment. Here we have estimated a very simple cointegrating relationship between CU and U using the Johansen procedure:

$$0 = CU + 0.25\ U \qquad (10)$$

Substituting for CU from (10) into (9) gives:

$$U = 7.8\ smic + 3.4\ \rho + 5.7\ t_1 + 2.0\ SK + 1.6\ (pm-p) \qquad (11)$$

Equation (11) implies that, in the long run, unemployment would be lower when the following variables are lower:

(i) the real minimum wage;
(ii) employers' tax wedge;
(iii) skill shortages;
(iv) the cost of capital; and
(v) real import prices.

Using the actual values of the right-hand variables in (11) gives a NAIRU of 8.2 percent in 1992.

Appendix II provides estimates of the dynamic equations (3) and (4). The dynamic equations illustrate that reductions in direct and indirect taxes would also have an impact on unemployment through wage and price dynamics, but only in the short run. However, given the long lags on these variables, the impact could last as long as two years. The fact that reductions in direct and indirect taxes only have a temporary impact, whereas a cut in employers' taxes has a long-run effect, is a violation of the IIP. However, this could be because the cost to the employer of employing someone at a wage of the SMIC plus employers' taxes is well above

market clearing rate. In these circumstances, reductions in employer taxes and the real value of the SMIC could help generate new jobs.

V. Recent Labor Market Measures

Sections III and IV identified some of the causes of unemployment in France; in this and the next sections we examine the recent policy responses. The most notable recent labor market initiative is the five year employment plan which was approved by the parliament in November 1993 (after the first version of this paper had been written). Prior to that, four principal labor market measures had been taken: (i) a new unemployment benefit system was put in place in January 1993; (ii) an action plan for the long-term unemployed was introduced; (iii) a number of labor market programs, particularly those aimed at the young, were expanded; and (iv) payroll taxes for the low paid were reduced. These four measures are reviewed below, a more detailed analysis of the five year employment plan follows in the next section.

1. The unemployment benefit system

The new benefit system, l'allocation unique dégressive (AUD), came into effect in January 1993. The benefits are financed by social security contributions, as before. The novel feature of the new system is that, after an initial period, benefits are progressively reduced every four months. The previous salary and the period of contribution to the system determine the initial level of the benefit. For someone who has worked for at least six months earning the SMIC, the initial replacement rate would be 75 percent gross or 83.8 percent net of contributions (Table 16); it would then decline over time. For someone earning F 20,000 per month, the initial replacement rate is equal to 57.4 percent gross or 67 percent net (Table 16).

Table 16. Replacement Ratio

Monthly salary (F)	Gross replacement ratio	Net replacement ratio
1 times SMIC (5,756)	75.0%	83.8%
1.1 times SMIC (6,332)	66.4%	78.4%
1.2 times SMIC (6,907)	64.2%	75.8%
1.3 times SMIC (7,483)	62.4%	73.6%
9,000	58.7%	69.1%
15,000	57.4%	67.3%
20,000	57.4%	67.0%
49,440	57.4%	66.5%

Source: Data provided by the authorities.

The initial period for which benefits are paid at the maximum level and the subsequent four-monthly reductions in the benefit are determined by the age of the claimant and the period of contribution to the system (Table 17). For example, someone earning F 9,000 per month who is less than 25 years old and has made fourteen months' of contributions in the last two years, would receive the maximum level of benefit for nine months. Thereafter, his benefits would be reduced by 17 percent every four months, and he would receive benefits for a maximum of 30 months (Table 17).

Table 17. Duration of Benefits

Qualifying period	Benefit duration (months)			
	Period of maximum benefit	Period of reduced benefit	Total	% reduction every 4 months
4 out of last 8 months 1/		4	4	-25
6 out of last 12 months	4	3	7	-15
8 out of last 12 months				
less than 50 years old	5	10	15	-17
50 plus	8	13	21	-15
14 out of last 24 months				
less than 25 years old	9	21	30	-17
25-49	12	18	30	-17
50 plus	17	28	45	-15
27 out of last 36 months				
50-54	20	25	45	-15
55 plus	27	33	50	-8

Source: Data provided by the authorities.

1/ For this category, benefits are reduced by 25 percent to start with.

2. Action plan for the long-term unemployed

In February 1992 the government introduced a program of systematically interviewing the long-term unemployed, Action d'insertion et de formation (AIF). The program aimed to identify the training needs and job prospects of the long-term unemployed. Between February 1992 and November 1992 about one million long-term unemployed were interviewed. Following these interviews, the rate of outflow of the long-term unemployed increased appreciably in spite of increasing difficulty in the economic situation. Thirty percent of the interviews led to a job or a training scheme, 25 percent of the interviews led to no action and 16 percent of the

interviewees were taken off the unemployment register. The rise in the placement of the long-term unemployed during the interview period was accompanied by a fall in the placement of short-term unemployed, indicating a substitution effect. However, this was in a period of economic slowdown and the exact magnitude of substitution is difficult to ascertain.

3. Labor market programs

Labor market programs have played an increasing role in the effort to stem the rise of unemployment (Chart 13). Numerous programs have been introduced: in July 1993, approximately 40 labor market programs were in existence providing assistance to some 1.9 million individuals. 1/ These programs provide aided employment in the public and private sector as well as early retirement and training provisions. These programs have had a significant impact on the labor market (Chart 13). OFCE estimate that during 1985-87 when the observed employment fell by 60,000 and unemployment rose by 170,000, labor market programs provided 370,000 jobs. Therefore, unemployment would have been higher in the absence of labor market programs.

Many programs are targeted at those facing the greatest difficulty: the young, the long-term unemployed, and those on the minimum social security benefit (RMI). In 1992 about half of the participants on employment and training schemes were under 26 years old. Table 18 provides a brief description of the schemes aimed at the young. Similar programs have been initiated for the long-term unemployed and those on minimum benefits. The most prominent are: contrat emploi-solidarité (CES) which creates jobs deemed to be of public value in the non-commercial sector for the long-term unemployed and those on minimum benefits; contrat de retour à l'emploi (CRE) which subsidizes the hiring of those who have been out of a job for over a year.

In June 1993, the new government announced a number of emergency measures to encourage employment. These measures essentially increased the level of the subsidies and the total funding of a number of existing programs, including:

- increased funding for contrat d'orientation: the state will provide a subsidy of F 2,000 for the first three months and F 3,000 for the subsequent three months to an employer taking on a poorly qualified under 23 year old for six months. The wage need be no higher than 30-65 percent of the SMIC;

1/ This figure includes those on early retirement schemes.

Table 18. Labor Market Programs for the Young

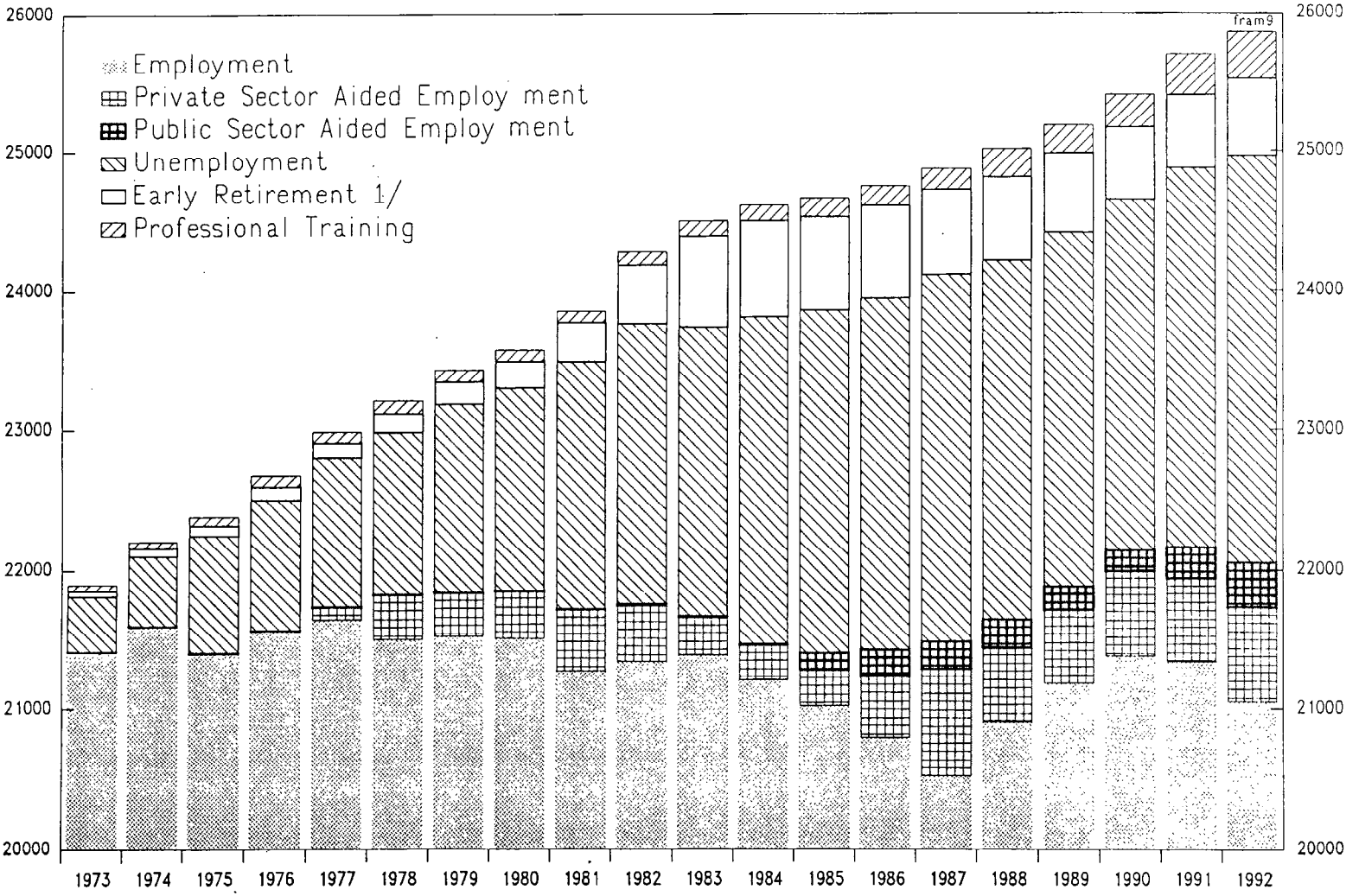
	Objective	Means
Contrat d'orientation	Aid the poorly qualified under 23 who have encountered difficulty finding a job.	32 hours of training per month in training centers, waive social security contributions, reduced SMIC.
Contrat de qualification	Help to acquire professional qualifications.	1/4 of work time in training, exemption of social security contributions, reduced SMIC.
Contrat d'apprentissage	Assist gaining of experience and qualifications through formal schemes.	Sharply reduced SMIC, waive social security contributions, 400 hours of training in special centers.
Contrat d'adaptation	Encourage the living of qualified young people under 26.	Reduced contributions and reductions in SMIC, 200 hours of on-the-job training.
CES (contrat emploi-solidarité)	Provide experience through socially valuable work.	Salaries paid by the state and contributions are waived.
Exo Jeunes	Help employment of those with no qualifications.	Waive social security contributions.
Credit formation	Encourage acquiring of qualifications.	Through other measures.
PAQUE	Provide access to apprenticeship or qualifications	Through other measures.
Contrat local d'orientation	Short-term work experience for the 16-18 year olds.	Wage subsidies, reduced SMIC and waive contributions.
Actions de formation alternée	Provide individually designed action plans.	Individual training and short work experience.

Source: Information provided by the authorities.

CHART 13
FRANCE

Employment, Unemployment, and Labor Market Programs

(Thousands)



Sources: Data provided by authorities and staff estimates.
1/Including those no longer seeking employment.

- under contrat de qualification the government will waive all social security contributions and provide up to F 10,000 to enterprises taking on an unqualified young person. The young will be paid 35-75 percent of the SMIC and benefit from a training program which will lead to professional qualifications;

- the state will pay F 5,000 for taking on apprentices under contrat d'apprentissage and social security contributions will be waived. The apprentices would be entitled to 400 hours of training and paid 25-78 percent of the SMIC;

- increased funding for contrat d'adaptation to enable young people with qualifications to gain experience. Social security contributions are reduced and employers will be paid F 2,000 for taking on a qualified under 25 year old who will be paid less than 80 percent of the SMIC;

- finally, the number of places on CES were increased to 650,000 and the state aid to employers for taking on someone on CRE was raised from F 10,000 to F 20,000.

4. Introducing payroll tax exemptions

In order to reduce the cost of hiring people at the bottom end of the pay scale, the government exempted employers from paying family allowance contributions for workers earning up to 10 percent above the minimum wage in July 1993. The contribution for those paid between 10 and 20 percent above the SMIC was cut in half. This was financed by an increase in a more broadly based tax, contribution sociale généralisée (CSG). This measure is to be expanded under the five year employment plan (see below).

VI. The Five-Year Employment and Training Law

In August 1993, the government unveiled a five year employment and training plan aimed at addressing the structural problems of the labor market. The plan, which contains over fifty measures, was approved by parliament in November 1993. The following are some of the major initiatives contained in the plan.

1. Reductions in employers' contributions

To build on the initiative introduced in July 1993 (see above) and further reduce the cost of employing low skilled workers, the plan proposes that by 1998 employers will be exempt from making family allowance contributions for those paid less than 1.5 times the SMIC, and will contribute half the usual amount for those paid between 1.5 and 1.6 times the SMIC. This measure will be phased in gradually over the 1994-98 period although it is immediately effective (January 1, 1994) for newly created firms (Table 19).

Table 19. Five Year Employment Plan: Employers' Family Allowance Contributions

Contribution Rate	NEW ENTERPRISES Earnings	
	Since July 1, 1993	From January 1, 1994
0	< 1,1 SMIC	< 1,5 SMIC
2,7%	1,1 SMIC-1,2 SMIC	1,5 SMIC - 1,6 SMIC
5,4%	> 1,2 SMIC	> 1,6 SMIC

Contribution Rate	OTHER ENTERPRISES Earnings				
	Since July 1, 1993	From January 1, 1995	From January 1, 1996	From January 1, 1997	From January 1, 1998
0	< 1,1 SMIC	< 1,2 SMIC	< 1,3 SMIC	< 1,4 SMIC	< 1,5 SMIC
2,7%	1,1 SMIC-1,2 SMIC	1,2 SMIC-1,3 SMIC	1,3 SMIC-1,4 SMIC	1,4 SMIC-1,5 SMIC	1,4 SMIC-1,5 SMIC
5,4%	> 1,2 SMIC	> 1,3 SMIC	> 1,4 SMIC	> 1,5 SMIC	> 1,6 SMIC

Source: Data provided by the authorities.

In addition to this measure, until 31 December 1995, employers taking on up to three new employees will be exempt from paying employers' contributions for two years. Furthermore, other employers' social security contribution rates, except those for unemployment insurance and pensions, will be frozen until 1998.

2. Measures aimed at the young

As regards youth training, the plan envisages that the responsibility for training all under twenty-six year olds will be devolved to the regions by the end of 1998. The government also intends to double the number of places on apprenticeship programs and to reduce the qualifying age from 16 to 14. In each employment office a section dedicated to providing information and guidance to the young is to be set up and a national committee will monitor progress on youth training and apprenticeship and publish a triennial report on the subject.

To promote youth employment, a wage subsidy of F 1,000 per head per month for nine months is to be paid to employers taking on a first time young worker for at least 18 months. This measure will be in place until 1998 but the subsidy will be doubled for any young workers taken on before October 1994. This subsidy will be available to young workers irrespective of their qualifications as long as they are not participating in another government program. Also, all private sector employers can take advantage of this subsidy as long as they have not announced any redundancies in the previous six months. 1/

3. Work-time flexibility and reductions in work-time

To enhance work-time flexibility, the 39 hour working week is to be replaced with an annual equivalent for an experimental period of two years. 2/ Part-time workers will be able to work up to 1,200 hours during an 18 month period and still receive unemployment benefits. Also, to encourage companies facing financial difficulties to switch from full-time to part-time work, rather than make people redundant, the law proposes to subsidize employers' social security contributions and extend unemployment benefit coverage for workers making the transition from full-time to part-time work.

1/ This measure replaced an earlier initiative, contrat d'insertion professionnelle (CIP), a youth training program aimed at the private sector. CIP was withdrawn after strong protest by the student organizations and the trade unions. Those participating in the scheme would have been paid below the minimum wage provided they received training.

2/ Social partners are invited to work out how this measure could be put into effect.

The tight regulations on Sunday working are to be eased. Shops in tourist areas will be able to open, and the local authorities will have greater freedom to grant local shops permission to open on Sundays.

As regards reductions in the hours of work, for an experimental period of three years, any company that achieves a 15 percent reduction in work-time, accompanied by at least a 10 percent increase in employment, will be eligible for a 40 percent reduction in employers' contributions in the first year and 30 percent in the subsequent two years. 1/ The law also allows changes in working-time to be made through direct negotiations between the employers and the employees at enterprise, industry or sectoral level. In the absence of an agreement, the legal duration of full-time work remains at 39 hours per week. 2/

4. Other initiatives

A number of existing training programs will be expanded. For example, the maximum duration of CES will doubled from 12 to 24 months and will be renewable up to three times with state subsidies available for up to five years. In addition, employers will be exempt from social security contributions for up to five years if they hire someone on a CES.

To encourage people to provide part-time services such as running errands for the elderly, the government is to introduce a "chèque service" whereby individuals will be paid for these services in vouchers bought at the post office. Those paid in vouchers will be exempt from social security contributions. This is also seen as a way of discouraging black market work.

To promote entrepreneurship, the aid for setting up new businesses will be increased to F 32,000 and will be available not only to those who receive benefits but also those who are registered as seeking employment.

The law also requires the creation of "enterprise committees" consisting of elected member of the personnel in each company. The management has to make an annual report on the financial state of the company, training, part-time work, etc, to the enterprise committee.

1/ This covers employers contributions to social insurance, family allowances and work accidents. The exact application of this measure will be determined by government decree.

2/ The maximum duration is 10 hours per day or 48 per week.

VII. Assessment and Conclusion

The recent slowdown in economic activity in France and in her trading partners, particularly Germany, has no doubt contributed to higher unemployment. However, the persistence and the composition of unemployment suggest that it is necessary to address the structural imbalances in the labor market in order to ensure a substantial decline in unemployment when the recovery takes hold. 1/

The government has taken a number of welcome measures in this regard. Table 20 attempts to assess the potential impact of the recent measures. The introduction of progressive reductions of unemployment benefits as the spell of unemployment lengthens (allocation unique dégressive) should, by lowering the ratio of the long-term to short-term replacement rate, reduce long-term unemployment (see Section III above). The initial replacement ratio, however, will remain rather high.

Evaluation of job and training prospects by means of individual interviews through action d'insertion et de formation should assist the long-term unemployed in finding suitable jobs or training, thereby reducing mismatch as well as excessive reliance on unemployment benefits. The array of reinforced labor market measures for the young (contrat d'orientation, contrat de qualification, contrat d'apprentissage, contrat d'adaptation) has the effect of reducing the cost of hiring young people through reductions in employers' taxes and the SMIC. Contrat emploi-solidarité and contrat de retour à l'emploi reduce the cost of employment through wage subsidies and contribution exemptions. The latter, in common with most youth programs, also has an element of training and should help reduce mismatch. There remains, however, a multitude of training programs with overlapping aims and complicated eligibility criteria.

The five year employment plan has provided the opportunity to formulate a medium-term strategy to address the structural issues in the labor market. The plan contains a number of very positive measures. For example, the gradual reduction in employers' family allowance contributions over the next five years will progressively reduce employment costs for the low paid. The plan also contains many beneficial training initiatives, notably the

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1/ Over the coming years the labor force in France is unlikely to witness an expansion such as that seen in the last twenty years unless the participation rate rises significantly. Demographic projections made by the World Bank (Bos and Bulatao, 1990) imply that the population of working age in France--for both males and females--will fall slightly over the next ten years before stabilizing during the following ten years. After the year 2010, when the post war "baby boom" generation starts to retire from the labor market, the population of working age should decline gradually for the following thirty years.

Table 20. Potential Impact of Government Measures on the Causes of Structural Unemployment

	Causes of structural unemployment			
	Employers' taxes	The minimum wage (SMIC)	Generosity of benefits	Mis-match
Reductions in unemployment benefits through time (AUD)	X	X	✓	X
Action plan for the long-term unemployed	X	X	✓	✓
Labor market programs				
contrat d'orientation	✓	✓	X	✓
contrat de qualification	✓	✓	X	✓
contrat d'apprentissage	✓	✓	X	✓
contrat d'adaptation	✓	✓	X	✓
contrat emploi-solidarité (CES)	✓	X	X	X
contrat de retour à l'emploi (CRE)	✓	X	X	✓
Payroll tax exemptions	✓	X	X	X
Five year employment law	✓	X	X	✓

✓ Positive impact.
X No impact.

Source: Staff assessment.

expansion of the apprenticeship programs. However, following the withdrawal of CIP, the plan does not really address the minimum wage problem. Furthermore, some elements of the plan are unlikely to enhance labor market flexibility and reduce structural unemployment. For instance, although easing the regulation regarding working on Sunday and annualizing the 39-hour week will enhance work-time flexibility, reductions in hours of work will, at best, have no impact on unemployment. Reducing working time would lower unemployment if output were unaffected. If output were affected then such a policy would be either inflationary or leave unemployment unchanged. The alternative is to have an equivalent reduction in earnings, which is difficult to bring about. Not surprisingly, therefore, empirical evidence casts doubt on the effectiveness of this policy in reducing unemployment. 1/ Reductions in working time are best left to individual negotiations between employees and employers.

On the whole, most of the initiatives taken by the government over the last few years are steps in the right direction. However, given the scale of unemployment in France, more ambitious measures are needed to ensure a substantial and rapid decline in structural unemployment when the recovery gathers pace. A few potential measures are given below, some could facilitate reductions in unemployment in the short-term, others would only bear fruit in the long-run.

1. Reduce the duration and generosity of benefits

In spite of the recent reform of the benefits system, Table 16 shows that the initial net replacement ratio in France remains high. Tables 10 and 17 indicate that unemployment benefits are available for longer in France than in most other industrial countries: benefits are available for up to two and a half years for those under 45 and for just over four years for those over 45. Florens et al (1990) show that there is a significant correlation between the expiry date of benefits and the probability of finding a job. This suggests that reducing the duration of benefits and their initial level could help to encourage search effort, reduce unemployment duration, and hence the total number of unemployed. Distributional objectives can be achieved more efficiently through taxation rather than through the benefits system. Furthermore, any savings from reductions in benefits and other passive measures such as early retirement could be transferred to reduce labor costs (through a further reduction in contributions) and fund more active measures (such as training programs) to enhance the skills of those searching for jobs.

2. Reduce employers' taxes further

The recent government decision to waive employers' family allowance contributions for those being paid up to 20 percent above the minimum wage and to gradually extend this to those earning up to 1.5 times the SMIC by

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1/ See OECD Employment Outlook (1990) and Layard et al (1991).

1998 is likely to help job creation by reducing employers' labor costs. However, at most, it will reduce labor costs by 5.4 percent of the net wage for the low paid (Table 19). Total employee and employer contributions as a ratio to income will still be higher than all other industrial countries except Italy and Belgium (Chart 9, lower panel).

Therefore, it is necessary to take further measures in this area in order to boost employment generation. The planned exemption schedule for employers' family allowance contributions to 1.5 times contributions by 1998 could be extended and accelerated. If exemptions are not extended to all employees, then they may act as a disincentive to employ workers at wages just above the ceiling. They could also discourage training, because those with training could exact wages above the exemption threshold. 1/ Cuts in benefits and budgetary expenditure are the most efficient means of financing an extension or acceleration of exemptions. However, in the long-run, it is desirable to de-link the financing of family allowances from employers' taxes completely; they could be financed through more broadly based income taxes. 2/

There have been suggestions for levying environmental, e.g., carbon taxes, at a European level and using the income generated to reduce employers' contributions. This proposal has to be treated with caution as it would not be a neutral measure: it will discriminate against energy intensive sectors and in favor of labor intensive ones. Besides, many previous recessions are associated with large oil price shocks. Therefore, any increases in environmental taxes should be made in small steps and on an experimental basis. 3/

3. Reform the minimum wage legislation

The analysis in this paper suggests that the minimum wage has a significant adverse impact on unemployment in general and youth unemployment in particular. Reducing the real value of the SMIC relative to average earnings will help to lower unemployment. However, under the current mechanism for revising the SMIC, a rise of 2 percent or more in the CPI automatically triggers an equivalent rise in the SMIC. Furthermore, the SMIC is raised by at least half the increase in real hourly wages in industry every year. It would be desirable to have a re-appraisal of the legal framework for revising the SMIC to ensure that it will not rise by

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1/ Further exemptions could be conditioned on some form of training to avoid this problem.

2/ The econometric results given in section 4 suggest that if the employer's tax wedge is lowered by 1 percentage point and employee taxes raised by 1 percentage point, then for a given level of capacity utilization, the unemployment rate would fall by about 0.1 percentage points in the long-run.

3/ I am grateful to Dennis Snower for drawing my attention to this.

more than the increase in CPI. At a minimum, the SMIC should not be increased by more than the current minimum legal requirement. 1/

In spite of the withdrawal of CIP, many existing employment schemes facilitate a reduction in the SMIC for the young. 2/ However, as an indirect mechanism these remain a second best solution. A better option is to introduce a reduced minimum wage for the young as this would be very transparent, permanent, and easy to apply. The introduction of a youth minimum wage in the Netherlands has had a positive impact on employment and the analysis in this paper suggests that it could help reduce youth unemployment in France. Failing this, the existing youth training programs, with remuneration below the minimum wage, could be simplified and the conditions for participating in them eased to ensure that they are easy to understand, targeted at the long-term unemployed and those with inadequate qualifications, and widely available (also see below under training).

4. Convert unemployment benefits into employment subsidies

The employment subsidy which replaced CIP (see above) should have a positive impact on youth employment because it reduces the cost of employing young people. However, this subsidy is not targeted as it applies to all under 26 year olds and is not conditional on any kind of training. It would be more efficient to have any subsidies targeted at those with greatest needs, for example the young unskilled or poorly qualified workers who have difficulty finding a job or training.

An interesting variant of employment subsidies is the idea put forward by Snower (1994a,b) which links subsidies to unemployment duration and training. Under this proposition the unemployed, particularly the long-term unemployed, can use part of their unemployment benefits to provide vouchers to the firms that hire them. The longer someone has been unemployed the more vouchers they will be given to use. To cash the vouchers, the employer has to provide training which leads to nationally recognized qualifications and the more training an employer offers, the higher will be the value of the vouchers when they are cashed. Subsequent to finding a job, the monthly value of the voucher declines as the period of employment lengthens. This scheme is not inflationary since the long-term unemployed exert little pressure on wage inflation, its cost is minimal because the funds would have been spent on unemployment benefits, and it encourages training for those who are most in need of it.

1/ In the long-run de-indexation could also reduce the relative real value of the minimum wage as it did in the United States during the 1980s.

2/ Those participating on contrat d'adaptation, contrat d'orientation and contrat d'apprentissage may be paid below the SMIC.

5. Improve the effectiveness of labor market programs

As explained in Section V, there are a large number of active labor market programs already in existence in France. Many are well targeted and some have been re-invigorated recently. However, if anything, there are too many programs: some 40 in total and about 10 just aimed at the young. Simplifying the multitude of programs, many of which share objectives as well as means, would make them more transparent and more easily understandable by employers and the unemployed and thereby improve their effectiveness.

Furthermore, experience so far suggests that measures which help create jobs in the private sector are more likely to lead to permanent jobs; a shift of resources to private sector job subsidies is likely to be beneficial. According to a recent survey 58 percent of those participating in CRE and 67 percent of those taking on a contrat de qualification held a job a few months after the program. 1/ However, only 50 percent of those participating in CES in the non-commercial sector were in employment subsequent to the program and one-fifth of those were on another CES program. The survey also found that in may cases CES did not have a training element. In this regard it is regrettable that CES is expected to expand more than the other labor market programs.

Given that signing-on for benefits in France is done monthly by mail, there is little contact with the unemployed. However, the intensive interviewing program for the long-term unemployed, AIF, has produced some encouraging results and its expansion would be helpful.

Targeted labor market programs such as those aimed at the young or the long-term unemployed will help to create employment in the long-run only if they enhance the skills of the individuals who participate in them. 2/ It is, therefore, necessary to have a well defined, nationally recognized system of qualifications for any such programs and to encourage employers to participate in the training schemes in order to ensure that the skills gained by the participants correspond to those that employers demand.

6. Introduce incentives for profit-sharing

The firms which practice profit sharing in France appear to enjoy higher profitability and productivity as well as higher employment growth compared to those which do not have any method of profit sharing (Commissariat Général du Plan, 1993). Tax incentives for profit sharing would be particularly effective if they were aimed at new firms because they

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1/ Survey by Centre d'Etudes de l'Emploi.

2/ Layard et al (1991) illustrate that non-targeted public employment would only increase net employment in the long-run under very restrictive conditions. For example, taxes needed to finance public employment would have to be fully absorbed by labor.

do not face the problem of replacing a part of existing wages with performance related pay. Profit sharing may not reduce unemployment if it results in strong productivity gains; however, it would introduce an element of wage flexibility and hence help to smooth the variation of employment over the cycle.

Econometric Results

In Table I.1, panel A reports the maximal eigenvalue test of the null hypothesis that there are at most r cointegrating vectors against the alternative of r+1 cointegrating vectors. 1/ Starting with the null hypothesis that there are no cointegrating vectors (r=0) against the alternative of one (r=1), the test statistic (36.7) is greater than the 95 percent critical value (33.3), rejecting the null hypothesis and indicating that there is at least one cointegrating vector. The null hypothesis of $r \leq 1$ against r=2, however, cannot be rejected, suggesting that there is a unique cointegrating vector. Panel B reports the trace test of the null hypothesis that there are at most r cointegrating vectors against the alternative that there are more than r. Again, the null of r=0 against $r \geq 1$ is rejected. However, the null of $r \leq 1$ against $r \geq 2$ cannot be rejected indicating that there is at most one cointegrating vectors. The two tests, therefore, indicate the existence of a unique cointegrating vector. Panel C of the table presents the estimated cointegrating vector. The coefficients in parentheses are normalized on w-p-pr.

Turning to Table I.2, in panel A the maximal eigenvalue test of the null hypothesis that there are no cointegrating vectors (r=0) against the alternative of one (r=1) is rejected, indicating that there is at least one cointegrating vector. The null hypothesis of $r \leq 1$ against r=2, however, cannot be rejected, suggesting that there is a unique cointegrating vector. In panel B, the trace test of the null hypothesis of r=0 against $r \geq 1$ is rejected. However, the null of $r \leq 1$ against $r \geq 2$ cannot be rejected indicating that there is at most one cointegrating vectors. The two tests together indicate the existence of a unique cointegrating vector. Panel C of the table presents the estimated cointegrating vectors. The coefficients in parentheses are normalized on p-w+pr.

1/ The Johansen procedure involves the simultaneous estimation of dynamic vector autoregressive (VAR) equations, for which fourth order lags were included. It is assumed that the variables have linear deterministic trends. Estimation has been done on MICROFIT 3.0, see Pesaran and Pesaran (1991).

Table I.1. Johansen Maximum Likelihood Tests and Parameter Estimates

Long-run vector for real wages

1971:I to 1992:IV (84 observations), maximum lag in VAR = 4
Eigenvalues in descending order: 0.33, 0.18, 0.14, 0.12, 0.05

A. Cointegration likelihood ratio test based on maximal eigenvalue of the stochastic matrix.

Hypothesis 1/			95% Critical	90% Critical
Null	Alternative	Statistic	value	value
$r=0$	$r = 1$	36.7	33.3	30.8
$r\leq 1$	$r = 2$	18.6	27.1	24.8
$r\leq 2$	$r = 3$	13.1	21.1	18.9
$r\leq 3$	$r = 4$	11.4	14.9	12.9
$r\leq 4$	$r = 5$	5.0	8.2	6.5

B. Cointegration likelihood ratio test based on trace of the stochastic matrix.

Hypothesis 1/			95% Critical	90% Critical
Null	Alternative	Statistic	value	value
$r=0$	$r\geq 1$	84.8	70.6	86.5
$r\leq 1$	$r\geq 2$	48.1	48.3	45.2
$r\leq 2$	$r\geq 3$	29.5	31.5	28.7
$r\leq 3$	$r\geq 4$	16.4	18.0	15.7
$r\leq 4$	$r=5$	5.0	8.2	6.5

C. Estimated cointegrating vectors, coefficients normalized on w-p-pr in parentheses.

Vector	w-p-pr	U	smic	SK	pm-p
1	1.98	0.13	-1.17	-0.30	-1.24
	(-1.00)	(-0.07)	(0.59)	(0.15)	(0.12)

1/ r denotes the number of cointegrating vectors.

Table I.2. Johansen Maximum Likelihood Tests and Parameter Estimates

Long-run vector for markup of prices over wages

1971:I to 1992:IV (84 observations), maximum lag in VAR = 4
Eigenvalues in descending order: 0.28, 0.12, 0.10, 0.04

A. Cointegration likelihood ratio test based on maximal eigenvalue of the stochastic matrix.

Hypothesis 1/			95% Critical	90% Critical
Null	Alternative	Statistic	value	value
$r=0$	$r = 1$	27.7	27.1	24.7
$r\leq 1$	$r = 2$	11.0	21.0	18.6
$r\leq 2$	$r = 3$	8.5	14.1	12.1
$r\leq 3$	$r = 4$	3.0	3.8	2.7

B. Cointegration likelihood ratio test based on trace of the stochastic matrix.

Hypothesis 1/			95% Critical	90% Critical
Null	Alternative	Statistic	value	value
$r=0$	$r\geq 1$	50.2	47.2	43.9
$r\leq 1$	$r\geq 2$	22.4	29.7	26.8
$r\leq 2$	$r\geq 3$	11.4	15.4	13.3
$r\leq 3$	$r\geq 4$	3.0	3.8	2.7

C. Estimated cointegrating vectors, coefficients normalized on p-w+pr in parentheses.

Vector	p-w+pr	CU	ρ	t_1
1	-2.59	0.07	0.67	1.13
	(-1.00)	(0.02)	(0.26)	(0.43)

1/ r denotes the number of cointegrating vectors.

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Dynamic Models

Table II.1. Dynamic Model for Real Wages

(Sample period 1971:I - 1992:IV)

$$\Delta(w\text{-}p\text{-}pr) = \underset{(6.09)}{0.30} - \underset{(1.96)}{0.19}\ \Delta(w\text{-}p\text{-}pr)_{-1} - \underset{(2.28)}{0.29}\ \Delta^2 p_{-1}$$

$$+ \underset{(2.00)}{0.46}\ \Delta t2_{-3} + \underset{(1.79)}{0.05}\ \Delta t3_{-3}$$

$$+ \underset{(2.24)}{0.30}\ \Delta(pm\text{-}p)_{-3}$$

$$- \underset{(6.11)}{0.08}\ rw_{-1}$$

where rw = residuals from the cointegrating vector (7)

$R^2 = 0.38$, SE = 0.007, DW = 1.86

LM(4) = 2.26, Ramsey's RESET $\chi^2(1) = 2.75$

Normality $\chi^2(2) = 0.57$, Heteroscedasticity $\chi^2(1) = 0.23$

Chow test $\chi^2(4) = 3.97$

Table II.2. Dynamic Model for the Markup of Prices Over Wages

(Sample period 1973:I - 1992:IV)

$$\Delta(p\text{-}w\text{+}pr) = \underset{(3.71)}{0.28} - \underset{(2.25)}{0.32}\ \Delta(p\text{-}w\text{+}pr)_{-1}$$

$$+ \underset{(2.81)}{0.002}\ \Delta CU + \underset{(2.00)}{0.32}\ \Delta t3_{-3}$$

$$- \underset{(3.12)}{0.52}\ \Delta(w\text{-}p)_{-1} - \underset{(3.67)}{0.05}\ rp_{-1}$$

where rp = residuals from the cointegrating vector (8)

$R^2 = 0.26$, SE = 0.007, DW = 1.84

LM(4) = 5.50, Ramsey's RESET $\chi^2(1) = 3.80$

Normality $\chi^2(2) = 0.85$, Heteroscedasticity $\chi^2(1) = 2.39$

Chow test $\chi^2(4) = 4.18$

Data Sources

All the data has been obtained from INSEE Quarterly National Accounts, Informations Rapides and Bulletin Mensuel de Statistique unless indicated otherwise.

p - market GDP price deflator

pm - import price deflator

pr - real GDP per man-hour

w - average hourly earnings in the market sector

t1 - employer's tax wedge defined as total contributions by the employers over gross wages

t2 - employee's tax wedge defined as total contributions paid by employees over income from employment

t3 - indirect tax wedge defined as indirect taxes over consumer expenditure

U - unemployment rate

SK - the percentage of firms reporting general or skilled labor shortage obtained from EC Quarterly Business Survey

CU - index of capacity utilization

ρ - cost of capital, taken from Taylor (1993)

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