AGGREGATE UNEMPLOYMENT AND RELATIVE WAGE RIGIDITIES

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The contrast between the United States and the EU countries in terms of unemployment is well known. It is summarised in Figure 1. In the United States there is no trend (if any, it is negative) over the period 1959–2002, although the unemployment rate remained abnormally high during the 1980s and early 1990s. In Europe, we start in the early 1960s with low unemployment rates (around 2 to 3 percent in France, Germany and the UK, that is, approximately half the US unemployment rate at the same period). In the 1970s, unemployment starts increasing in all countries. Substantial intra-EU differences are, however, observed after 1985. The unemployment rate remains high in a majority of countries (more than 8 percent in France and Germany, for instance), while it is on a decreasing path in some others (mainly the United Kingdom and the Netherlands).

The rules governing the labour market (the so-called "labour market institutions") are, of course, quite different in the United States compared to most EU countries: limited social security provisions (especially unemployment insurance), wage formation, etc.. However, most economists agree today that such institutional differences alone cannot explain the differences summarised in Figure 1. Many European countries were already enjoying well-developed welfare systems in the late 1960s, well before the rise in unemployment. It is also difficult to explain US-EU differences by country-specific shocks. Most economic shocks (oil shocks, disinflation, introduction of new technologies, etc.) were common to all countries. Against this background, the consensus view is that the observed variety of outcomes can only be explained by the interaction between specific institutional setups and common shocks. Despite the difficulty of measuring "institutions" and "shocks", empirical work has accumulated convincing evidence supporting that point of view.[1] The main challenge, however, is to uncover the mechanisms at work, so as to be able to derive the right policy implications and design appropriate institutional setups.

Labour market institutions

Our understanding of the interactions between institutions and shocks and their implications for unemployment has been improved by the use of general equilibrium models incorporating job creation and destruction, search and wage formation behaviours. Three institutional aspects have been particularly emphasised in the literature: unemployment benefits, employment protection and wage rigidities (in the form of minimum wages, e.g.).

Unemployment benefits affect the equilibrium outcome by

Figure 1

UNEMPLOYMENT RATE

Source: Bureau of Labour Statistics.
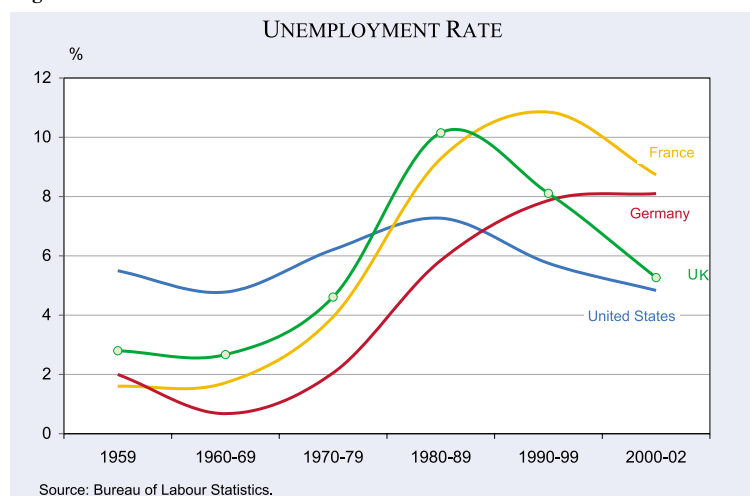
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[1] See for instance Blanchard-Wolfers (2000), Bertola, Blau and Kahn (2001).

changing the unemployed job seeker's search and bargaining behaviour. The effect on equilibrium employment is clearly negative. The quantitative effects obtained by simulating general equilibrium models are in line with those reported in the empirical literature: the elasticity of expected unemployment duration with respect to benefits is generally in the range of 0.2 to 1.0; and an increase of ten percentage points in the replacement ratio increases the equilibrium unemployment rate by one to two percentage points.[2]

Figure 2

LOW-SKILLED[a)] UNEMPLOYMENT RATES
Difference with aggregate unemployment rate

US: Less than high school diploma   France: Non qualified blue and white collars
Germany: No qualification   UK: No qualification (only male population).

Source: Bureau of Labour Statistics; Fonseca, Maillard and Sneessens (1998); Buttler and Tessaring (1993); Nickell and Quintini (2001).

Employment protection legislation is known to have a priori an ambiguous effect: it decreases the job destruction rate, but has simultaneously a negative impact on the job creation rate. When all wages are adjusted by free bargaining between employers and employees, the net outcome seems to be a lower unemployment rate. With rigid wages, the results are reversed, albeit quantitatively small.[3] Imposing a minimum wage constraint turns out to have a strong negative impact on employment through a higher job destruction rate. This result is again confirmed by empirical literature.[4]

Wage rigidity in least productive jobs explains most of the US–EU differences in unemployment

The role of these three institutional variables has been further examined in Joseph, Pierrard and Sneessens (2004). They consider an economy where firms are hit by firm-specific (idiosyncratic) productivity shocks. Wages are negotiated at the firm level, but can never fall below a minimum wage determined at the aggregate level (by a minimum wage law e.g.). Employment protection is introduced as a firing tax. Unemployed workers receive unconditional unemployment compensation. As expected, the wage rigidity reinforces the negative employment effects of employment protection. The key result, however, is the dominant role played by relative wage rigidity. Numerical simulations suggest that, among the three institutional variables considered in the model, it is the wage rigidity associated with the least productive jobs that explains most of the differences between US-type and EU-type economies, both in terms of
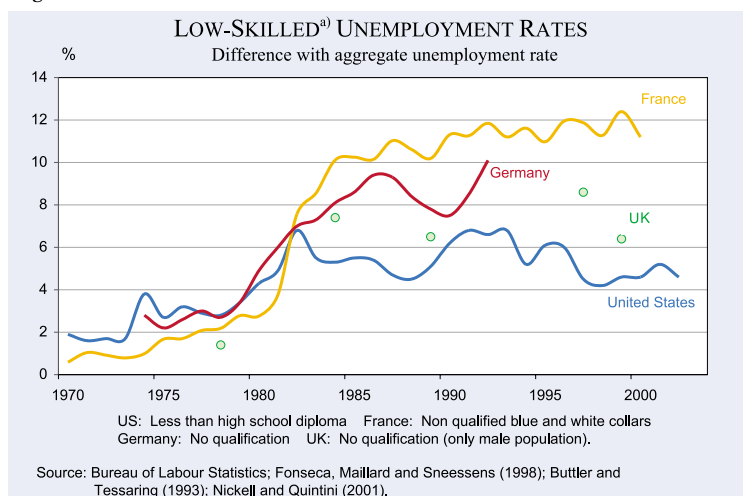
equilibrium unemployment rates and of the cyclical properties of job creation and destruction.

Low-skilled unemployment

It is not enough to take into account firms' heterogeneity. Workers are heterogeneous, too. There is ample empirical evidence that biased technological change (combined with organizational changes) has had a negative impact on the demand for low-skilled workers. Microeconometric studies also show that the probability to exit unemployment is much lower for low-skilled workers. Figure 2 reproduces the difference between the low-skilled and the aggregate unemployment rates in the four countries already considered in Figure 1. It is in France and in Germany that the low-skilled unemployment problem seems most acute. More recent data, reported in Puhani (2003), suggest that the low-skilled unemployment problem has further increased in Germany during the 1990s. Figure 3 compares the real minimum wages in the United States and in France over the last three or four decades. The trends go in opposite directions: downward trend in the United States, upward trend in France. Standard wage dispersion indicators (D5/D1 ratios) suggest that throughout the 1980s and the 1990s wage dispersion has been increasing in the United States and in the United Kingdom, stable or decreasing in France and Germany respectively. This suggests that the low-skilled unemployment problem may be related to relative wage rigidities in the face of relative demand changes.
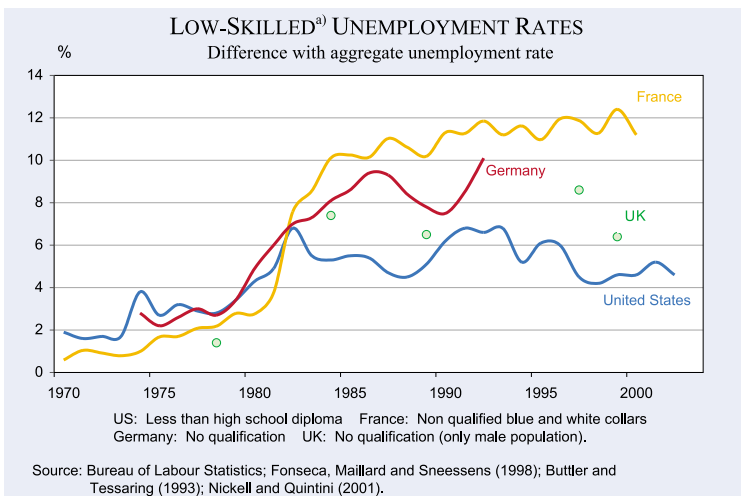
Although this last conclusion is widely accepted, there is much controversy about the contribution of

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[2] See for instance Layard, Nickel and Jackman (1991), Holmlund (1998).
[3] See Garibaldi (1998), Cahuc and Zylberberg (1999).
[4] See for instance Kramarz and Philippon (2001) for an empirical evidence on French micro data.

Figure 3

LOW-SKILLED[a)] UNEMPLOYMENT RATES
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the low-skilled unemployment problem to aggregate unemployment. If relative demand changes were the main cause of low-skilled unemployment, one should simultaneously have observed a decrease in high-skilled unemployment, with a resulting ambiguous effect on total unemployment. Some people thus argue that the rise in low-skilled unemployment is much more related to the change in relative supplies rather than to the change in relative demands. With more and more high-skilled job seekers, low-skilled workers are crowded out of their traditional labour market segment (the so-called "job competition" or "crowding-out" effect). Empirical investigations correlating aggregate unemployment to a variety of institutional variables and to a measure of the change in net relative demands for skilled workers often suggest a limited (albeit significant) effect. A correct evaluation is, however, made difficult by the lack of long-run time series data on relative wages, relative labour force and employment changes, and on crowding-out effects.

issues. This representation of the working of the economy includes frictions and search behaviours in the labour market. The model is calibrated on Belgian data (Belgium is a fairly typical EU country in terms of aggregate unemployment performance, wage dispersion, labor market institutions, etc.). The numerical parameter values are either based on the available empirical evidence chosen so as to reproduce the situation observed in the mid-1990s, in terms of unemployment rates, job destruction rates, unemployment exit rates, etc. We next introduce two changes: (i) an increase in the proportion of high-skilled workers in the labour force; (ii) a biased technological change stimulating the relative demand for high-skilled workers. The net outcome is a "net biased technological change" unfavourable to low-skilled workers. These two changes are meant to reproduce the changes observed from the mid-1970s till the mid-1990s. Information on labour force composition changes comes from labour surveys; information on biased technological change comes from the estimates of a production function.

The results of this simulation exercise are reproduced in Table 1 for two variants of the same scenario, respectively fixed vs. flexible wages. The "fixed relative wage" variant reproduces the observed situation: relative wages did remain unchanged over the whole period. With this constraint on relative wages, our representation of the working of the economy

Is low-skill unemployment related to changes in relative supplies, to crowding-out?

Biased technological change and job competition

Calibrated general equilibrium models offer an interesting alternative analytical tool. In Pierrard-Sneessens (2003), we construct a model with two types of jobs ("simple" and "complex") and two types of workers (low-skilled and high-skilled), so as to be able to discuss both biased technological change and job competition

Table 1

Simulating the effects of a net biased technological change

	net skill bias	u^h	u^l	w^l/w^h	crowding out
Actual data (Belgium)					
1996 values		6.8%	20.1%	67%	n.a.
1977–96	+0.28	+2.1	+13.3	+0.0	n.a.
Model with rigid wages					
1977–96	+0.28	+2.7	+10.1	+0.0	+6.5
Model with flexible wages					
1977–96	+0.28	+0.4	+2.4	-15.5	+7.2

Sources: Pierrard and Sneessens (2003). u^h: high-skilled unemployment rate; u^l: low-skilled unemployment rate; w^h: high-skilled wage; w^l: low-skilled wage. Low-skilled: at most lower secondary education. High-skilled: at least upper secondary education.

reproduces quite well the unemployment changes observed in Belgium: the high-skilled rate increases by around 2.5 percentage points, the low-skilled unemployment rate increases by more than 10 percentage points. The "flexible wage" variant mimics quite well (from a qualitative point of view) the situation observed in countries like the United States or even the United Kingdom: the rise in aggregate unemployment is moderate, the relative wage of low-skilled workers decreases, but still the difference between the low-skilled and the high-skilled unemployment rates increases. The role played by job competition seems crucial. Although the proportion of "simple jobs" occupied by "over-qualified" high-skilled workers remains limited (around 6 to 7 percent, which is well below the most often quoted estimates of "crowding-out"), job competition contributes significantly to the deterioration of the low-skilled worker's employment perspectives.

Combining cuts in the replacement ratio and subsidies to low-skilled workers would reduce unemployment without increasing inequality

The conclusion seems to be the existence of a trade-off between wage inequalities and unemployment: low wage inequalities are associated with high unemployment (typically in European economies) and high wage inequalities are associated with high levels of employment (typically in Anglo-Saxon countries).

Policy implications

Should we choose between income inequality and unemployment? Table 2 reproduces the outcomes of three policy scenarios. The results are based on numerical simulations of a general equilibrium model similar to the one discussed before. The reference situation is the one prevailing in 1996 (first row of Table 1). The first policy considered is simply a drastic reduction in the replacement ratio (50 percent cut). The effects are those one would expect: a significant reduction in the unemployment rates (10 percentage points for the low-skilled worker group). The cost of this increased economic efficiency is a drastic increase in income inequality. The relative wage of the low-skilled worker decreases by

6.2 percent; the average consumption of low-skilled workers decreases by 10 percent, while that of high-skilled workers increases by 5 percent. That is, labour market conditions (relative labour productivities, relative labour supplies) are such that the economic efficiency gains benefit only one category of worker and is detrimental to the other, in absolute as well as in relative levels.

The second policy scenario considered is a 15 percent tax cut on low-skilled wages, financed by a tax on high wages (5 percent) so as to keep the government budget in equilibrium. This policy stimulates the demand for low-skilled workers (the low-skilled unemployment rate decreases by 6.6 percentage points), while leaving high-skilled employment almost unchanged. Both unemployment and wage inequality are reduced, but the welfare of high-skilled workers deteriorates.

The last policy scenario combines the previous two: a drastic cut in the unemployment replacement ratio and simultaneously a subsidy to low-skilled employment. The effects on unemployment rates are more favourable than in each of the previous two scenarios. This time though, the improved economic efficiency benefits both categories of workers.

Conclusions

We emphasised the role of relative wage rigidities in explaining the differences between the United States and a "typical EU economy". Simulating general equilibrium models does suggest that relative wage rigidities are one of the key institutional features explaining both the changes observed in several EU countries over the last decades and the contrast with the US economy. Our conclusion is thus that to stimulate employment one should change the "institutions" of the labour market so as to allow more (downward) flexibility of wage costs. Simply reducing the generosity of the unemployment benefit system contributes to that objective, but is does so by

Table 2

Policy design, unemployment rate and income inequalities

	u^h	u^l	W^l/w^h	consumption	
				high skill	low skill
50% replacement ratio reduction	−1.3	-10.0	−6.2%	+5.0%	−10.1%
15% low-wage subsidy	−0.4	−6.6	+7.1%	−0.8%	+7.4%
Combining the two policies	−1.5	−12.4	+3.2%	+2.2%	+0.7%

exacerbating income inequality. Combining this policy with wage tax cuts targeted at low-skilled workers amplifies the positive employment effects and avoids the income inequality problem. Such a policy combination can be beneficial for both groups of workers.

Distinguishing two groups of workers (high-skilled and low-skilled), of course, fails to account for the huge heterogeneity observed in actual economies. Designing an optimal policy package is thus not that simple. Our discussion, however, illustrates why unemployment figures alone may be grossly inappropriate policy performance indicators. Labour market reform proposals will be more successfully and efficiently implemented if they benefit the poorest workers as well as the wealthiest.

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