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Reducing Unemployment. At any Cost?

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Introduction

If an economist were to comment in the early 70's on the post-war economic performance of Western Europe and the United States, he may have put forward the following story. "Production in Europe has grown faster than in the United States because the Old Continent was recovering from a large scale shock, the World War II, which had destroyed a large share of its stock of physical capital. The United States, instead, did not suffer a comparable destruction of their productive capacity. This *convergence* effect -as growth economists call it- is the main explanation of the slower growth of the US during the third quarter of the XXth Century. High investments and fast growth foster the demand for labor, and this explains why unemployment rate in Europe (2-3%) has been lower than in the US (4-5%) in the post-war period". Convergence effects are transitory, and a reasonable forecast for the last quarter of the century would have been that in Europe growth would slowdown, and unemployment rise up to the 4-5% rate

experienced by the United States in the post-war period.

The reality turned out to be much more bitter than this prophecy. European unemployment went up, first moderately after the first Oil Shock, then abruptly between 1977 and 1985. Employment has never stably recovered, thereafter, and currently unemployment rates in Europe fluctuate around levels of the order of 11-12%. The experiences of different European countries are not homogeneous (see Marimon, 1997; Marimon and Zilibotti, 1997b).To one extreme, Spain went through a rapid increase of unemployment from 2.6% in 1973 to over 20% in the mid 80's, and its most recent figure remains above 22%. To the other extreme, Portugal, Sweden and Finland remained immune to the growing unemployment epidemic throughout the 70's and 80's, although the performance of the two Scandinavian countries (especially Finland) has also deteriorated in the 90's. Leaving aside these differences, the persistence of high unemployment seems to be the central issue of Western Europe at the turn of the century. During the same period, unemployment exhibited no trend in the United States. Unlike their opinion for the first postwar decades, economists have divided positions about what the sources of these diverging experiences are. There is no simple and uncontroverted theory which explains why the fourth quarter of this century has been so dramatically different from the previous one, and a variety of theories, often implying conflicting prescriptions, have proliferated.

The comparison of the recent experience on the two sides of the Ocean has originated an intense political debate, too. On the one extreme, strenuous defenders of the European way of life deny that the rise of unemployment calls for rethinking and reforming the Welfare State. Their main point is that this system has guaranteed a fair degree of prosperity and social justice for decades, without causing high unemployment. The policy which they typically advocate is yet another legislative intervention aimed at reducing the weekly hours worked by each employee -a proposal which, as far as its effects on employment are concerned, is regarded with skepticism by most economists. To the opposite extreme, Welfare State-skeptics regard European labor market institutions as an irrational superstructure which prevents the market from doing its job, thus keeping unemployment high. Their analysis leads to radical remedies: "free labor markets from any regulation, go flexible, dispense with the Welfare State". This position has gained a growing credit in the political debate.

The reflection which we will carry on in this article does not intend to take a stake in this contest. Our purpose is, rather, to provide a balanced assessment of the recent history based on a theoretical methodology which has proved to be very fruitful in addressing many issues in labor economics, the *search* approach. The result which we want to stress is that there exists no painless panacea, and whatever way a society decides to go, it will be confronted with unpleasant trade-offs. Our research is motivated by two observations. The first, often neglected by the Welfare State-skeptics, is that not all records of the "flexible" American labor market are positive: there are lights (low unemployment) but also shadows (increasing wage inequality, low productivity growth). The second, typically eluded by the Welfare State-enthusiasts, is that the economic conditions have changed irreversibly after the 70's, and it would self-deceptive to hope that the Golden Age in which Welfare State and full employment were mutually compatible can be restored.

We stress in particular the role of one institution, unemployment benefit insurance, which can be regarded as representative of a variety of Welfare State policies. The conclusions of our work are in agreement with the Welfare State-skeptics' view that unemployment insurance has been a key factor in determining the increase of unemployment in Europe. But our analysis also warns about the undesirable implications on the wage (and income) inequality and, possibly, on economic efficiency which would arise by dispensing with unemployment benefits. The net effects on social welfare of switching from a Welfare State to a pure laissez-faire system can go either way (or, in economists' terms, are in general ambiguous). Choosing between the "American" and the "European" option is therefore much more a matter of social preferences between conflicting objectives than a choice between a rational modern market-oriented society and obsolete irrational institutions, as Welfare State-skeptics often argue. Keeping the Welfare State alive at the turn of the century may have the cost of accepting substantially higher unemployment levels than in the past, of the order of 8-10%. But the cost of dismantling this system should not be underestimated, either, as the recent experience of the United States clearly shows.

The dark side of the US experience

" Rising inequality. Stagnant real wages. A declining middle class. High levels of child poverty. A waning union movement. Homeless people in every city. Bursting jails or prisons. A fraying social safety net." This description of the changes in the American society during the last two decades is not drawn from a Marxist pamphlet, but is the beginning of an article by R.B. Freeman (1996) published on the Harvard Business Review. If in Europe the main social and political concern has been increasing unemployment, in the US it has been rising inequality, which has produced the so-called class of *working-poor*.

The increase in wage inequality observed during the two last decades is the main source of this new poverty (see Levy and Murnane, 1992; Gottschalk and Smeeding, 1997). The data show that wage inequality was already higher in the United States than in all major European countries during the late 60's (except for France), and that the gap has increased significantly over the last twenty years. From 1970 to the early 90's, wage inequality has increased continuously in the US, while in France, Italy and Sweden inequality has not increased. Great Britain has had decreasing wage inequality in the 70's and increasing wage inequality in the 80's. In the article cited above, Freeman reports that *"... in Western Europe, a male worker in the bottom 10% of the earnings distribution earns 68% of the median's worker income; in Japan, that male worker earns 61% of the median. In the United States, he earns 38% of the median... Low-paid German workers earn 2.2 times more than low paid Americans..."* (p.116).

A further interesting feature of the data is that wage inequality has been increasing not only *between groups* but also *within groups*. In plain words, not only the wage differential between workers of different attributes or qualifications (e.g. college-graduates *vs.* high-school graduates, experienced *vs.* inexperienced workers), but also between workers of *identical* characteristics have grown in the US but not in Europe. The growing inequality between equally qualified workers in the US is even more puzzling than the observation that the relative wage of unskilled workers has dramatically fallen. We will come back to this point.

Freeman expresses a concern for a *waning union movement* in the United States. This concern would probably not be shared by a number of analysts of the European unemployment issue. A common view is that the main responsibility of the persistence of high unemployment in Europe lies precisely in the selfish and corporative attitude of the unions. Unions only care -it is argued- about the interest of their employed affiliates. Their activity keeps wages artificially high, preventing the market from absorbing the mass of unemployed. A diminishing power of unions would therefore be welcome as reducing the privileges of the *insiders* (employed workers) in favor of the unprotected *outsiders* (unemployed workers). But are the perspectives of a jobless worker really less dim in economies with weak unions, like the United States, than in economies with powerful unions, like Europe, as this common view would suggest? On the one hand, it is true that in the United States unemployment is on average a much more transitory experience than in Europe. In 1989 more than half of the unemployed in Europe could not find a job after one year unemployed, against less than 10% in the United States. Yet, it is less than clear that a typical American unemployed face a better future than her European counterpart. First, the financial hardship of living without a salary is mitigated in most European countries by more generous unemployment benefit legislations. Second, the typical job which the European worker eventually takes is on average better-paid and more stable than the one taken by the American worker, who often move from a precarious job into another. Overall, there is no evidence that the lifetime labor market experience of a typical American unemployed is any better than that of his European counterpart (see CEPR Report, 1995, p. 13). Freeman's alarm for the decline of the American union movement may therefore be well-motivated.

There is another dimension in which the US performance is disappointing: productivity growth. The growing unemployment gap notwithstanding, total GDP growth in Europe has been fairly similar to that of the US in the last 25 years. In the period 1975-93 the GDP growth rate of the US has been 2.6% per year, about the same as that of Germany (2.5%), France (2.4%), Italy (2.8%) and Spain (2.5%), only significantly higher than the United Kingdom's (1.9%). The two facts, different employment rates and similar growth rates, imply large differences in productivity growth: in the period 1975-94 the average growth rate of output per worker in Western Europe has been one percent above the US rate. While it is true that this gap in favor of Europe also existed in the 60's, it is hard to believe that in the 90's we still observe significant catch-up effects associated with the post-war recovery. A recent article on the Economist (May 1996) suggests the following explanation. *"Weak unions and low minimum wages have allowed real wages at the bottom to fall. This, in turn, means that American companies hire relatively more (cheaper) workers than their European counterpart. Hence the average American restaurant has more waiters and table-clearers than its European equivalent..."*

If lower productivity growth simply reflected the fact that for each cheap (and low-productivity) job which is created in the US, Europe has one additional unit of unemployment, the balance would certainly be in favor of the flexible market options. But this view has been questioned from both a theoretical and empirical standpoint. Acemoglu (1997) finds support to the hypothesis that "good"' and "bad" jobs are to some extent substitutes of each other. In plain words, this means that economies where "cheap jobs" are not profitable (because of high minimum wages or unemployment benefits) tend to generate a larger

number not only of unemployed, but also of high pay, high productivity jobs. The author tests this hypothesis comparing data across American States (from the Current Population Survey), and the conclusion is that minimum wages and unemployment benefits may increase unemployment but also improve the composition of jobs substantially. Although no similar empirical investigation has been carried on with European data, the same author stresses that the indirect evidence from differences in productivity growth suggests that the same trade-off may well explain the differences between Europe and the United States: *"on the one hand, the society may choose high employment, but also a high proportion of low pay jobs and low labor productivity; on the other it may opt for an equilibrium with more good jobs, high productivity but also higher unemployment"* (p. 3)[1].

The irreversible end of the Golden Age

A number of economic theories -supported to various extent by empirical evidence- argue that the economic environment since the late 70's went through a transformation which has changed the impact of Welfare State institutions on unemployment. A popular view in the recent economic literature is that the evolution of international trade, in particular the increasing flow of manufacturing exports from developing countries into OECD markets has hurt low-skilled workers in developed economies (see Krugman, 1994; Freeman, 1995). The flow of labor-intensive manufactured goods from Least Developed Countries into Western markets has been equivalent to a large-scale immigration of unskilled workers from less developed to developed countries. Foreign competition -this theory says- has made stagnant the production of unskilled labor-intensive goods (e.g. textiles) in Developed Countries and the consequent fall in the demand of unskilled workers has depressed the wages of these workers. In the United States this has originated increasing wage inequality. In Europe, where the action of trade unions keeps the range of wages artificially *compressed*, we have seen growing unemployment of low-skilled workers. This simple and elegant explanation has two important drawbacks. First, it can only account for rising wage inequality among workers with heterogeneous characteristics (the *skilled* vs. the *unskilled*), while as we discussed above inequality has also increased within workers with identical characteristics. Second, this explanation suggests that unemployment in Europe should be more concentrated among unskilled workers than in the US. But this is in contradiction with the evidence that the unskilled-to-skilled unemployment ratio is about the same in Europe and in the US. Moreover, skilled unemployment has grown in Europe, too, while the theory would suggest the opposite.

Krusell et al. (1997) argue, instead, that an important feature of recent growth in developed economies is a rapid fall in the cost of using capital equipment, and postulate that low-skill workers are better substitutes for capital than high-skill workers. These two facts -declining price of capital and capital skill complementarity- has induced firms to switch towards techniques which are intensive in capital and in skilled workers, decreased the demand of unskilled workers and increased the skill premium. Although the mechanism proposed by these authors is different and supported by sounder empirical evidence, the explanation provided by this theory shares most of the implications (and criticism) of the "trade" approach.

Although the causes and nature of the change occurred are still open to debate, economists tend to agree that the environment of the 90's is fundamentally different from that of the 60's, and that restoring the Golden Age of the Welfare State through renewed forms of public intervention is bound to fail. Any realistic policy proposal for the beginning of the XXI century has to confront trade-offs which are substantially different from those faced by European economies in the 60's.

A new theory: unemployment vs. mismatch

As we have indicated earlier, it is common to associate the different performance of US and European labor markets with differences in market flexibility. The degree of flexibility is typically defined by a number of institutional features of the labor market, like the hiring and firing regulations, the degree of centralization of bargaining procedure and unionization, the extent to which contracts signed by unions bind, etc. Although understanding and quantifying the effects of these institutions may be important, we believe that the economic literature has somewhat exaggerated the extent of the institutional differences between the European and the Northamerican labor markets. This has contributed to the spread of the preconceptional view that European labor relations are the realm of sclerosis, in contrasts with frictionless and well-functioning American labor markets.[2] In some recent work (Marimon and Zilibotti, 1997a), we have explored the hypothesis that large differences in outcomes may have been generated by a relatively small degree of institutional differences, and tried to explain the events of the last two decades through the filter of a common theoretical model for both Europe and the US. The predictions of our theory match remarkably well, as we will see, the observed patterns.

We focus in particular on the role of unemployment insurance. Although this institution exists in both Europe and the United States, there are important differences in both levels and set-up. In Europe, typically an unemployed worker receives periodically a cash payment financed by general revenue. Both the duration and coverage vary across European countries. In the US there are important differences between State and State. But there is general agreement that unemployment insurance is substantially more generous in Europe than in the United States.

There are economic arguments both in favor and against unemployment benefits. The criticism to this institution is twofold. First, unemployment benefits distort workers' incentives to seek employment: the transfer makes unemployed workers reduce the time and intensity devoted to searching for a job. Second, they increase the minimum wages at which the unemployed workers are willing to take employment. Both effects raise unemployment.[3] On the other hand, unemployment benefits are defended on the ground that they provide workers with valuable social insurance against the risk of experiencing unemployment spells during which they receive no labor income. Beyond the insurance motives, unemployment benefits are argued to reduce mismatch. In other words, they provide the necessary safety net to give time to the unemployed to search, not just *for a job*, but for *the right job*. While often heard in the political debate, this point has never been thoroughly considered by the economic literature which has attempted to explain the various pieces (unemployment, wage inequality, productivity) of the Europe vs. US puzzle. This is precisely the focus of our work.

Let us start from a basic question: who is an unemployed in a modern economy? Unemployed is a person in working age who is searching for but has not found yet a job which fits her *aspirations*. Apart from historical and cultural connotations, this aspiration level depends on a variety of legal and social institutions. If, for instance an unemployed receives the support of her family or community, she can afford to be more ambitious in aiming at a certain type of occupation than if she is threatened by homelessness and starvation. To put an extreme example, suppose that a government made it liable to prosecution being unemployed for more than one month. If politically sustainable, this policy is likely to reduce substantially unemployment, but at the potentially very high social cost of inducing many people to take by necessity very unsuitable job matches - many Ph.D. in computer science would be employed as waiters! This link between unemployment and mismatch has been recognized, for example, by Solow (1987), who suggests that we should count as (involuntarily) unemployed all agents whose 'marginal value of leisure is less than the going real wage in occupations for which they are qualified', a definition which *'covers both the skilled mechanic who does not take work as a sweeper and the one who does'* (p. 33).

In order to formally analyze the trade-off between unemployment and mismatch, in Marimon and Zilibotti (1997a) we construct a theoretical model in which the process of matching workers with firms is costly: firms invest significant resources in recruitment, workers spend time end energy in reading announcements, attending interviews, etc.. In other words, a very important feature of the labor market is the existence of *search frictions*. Second, we make the realistic assumption that a worker has a different productivity depending on the firm with which he takes

employment. A worker who performs tasks which are "suitable" to her qualification has a higher productivity, and earns a higher wage. In a competitive labor market where workers and firms can be matched instantaneously at no cost, this would just imply that all agents take employment with their ideal firm. However, this perfect match between workers and firms does not occur in our labor market, since -due to search frictions- it takes time before a particular worker and a particular firm offering a vacancy happen to be matched to each other. And waiting has a cost. For firms, because they have to pay recruiting costs while holding an unfilled vacancy. For workers, because they do not earn a wage while unemployed. Since finding a job is both time and resource-consuming, matches which are not the most productive given the characteristics of worker and firms are normally formed.[4]

Assume now that labor markets have become more "segmented" and that it is more important today than in the 60's to have a job consistent with one's qualification. In the United States, since unemployment insurance is very low, workers find it very costly to be unemployed, and continue to accept a large range of job offers, even when these imply very low salaries. Since the productivity gap between good and bad jobs has now grown for technological reasons, the extent of wage inequality -even between workers with identical qualifications- goes up in the more segmented low-insurance economy. In the economists' jargon, *technological change amplifies the effects of mismatch on earnings*. Since workers keep accepting "any job", the unemployment rate undergoes no major change. In Europe, instead, since unemployment insurance is more generous and mitigates the hardship of being "on the dole", workers can afford to change their search behavior and adapt it to the change of the economic

environment. In this more segmented high-insurance economy the unemployed accept now only jobs for which they are relatively better-qualified than they did before, and reject poor opportunities which would yield them a low wage. Since job-seekers are more selective and bad matches are not formed, this economy does not have "poor workers" nor wage inequality changes substantially. To say it again in the economists' jargon, *the endogenous change of the workers' acceptance cut-off offsets the inequalizing effects of technological change*. But precisely because workers are choosier, in this high-insurance economy each unemployed searches for longer before finding the right opportunity, and the unemployment rate therefore grows.

In summary: two similar economies but with (slightly) different institutions react very different to a global technical change. These different reactions are consistent with the contrasting observed trajectories of Europe and the United States which have been discussed earlier. They are also consistent with the observation that the average productivity of labor has grown faster in Europe than in the US: this would be due to the fact that in the former there is less mismatch than in the latter.

Testing the quantitative predictions of our theory

The traditional procedure to test the validity of an economic theory consists of applying econometric techniques (e.g. regressions) to the data to estimate the relationships between the variables of interest predicted by the theoretical model. If the estimated parameters have the sign predicted by the model, and are quantitatively significant, then the theory is regarded as empirically validated. Otherwise, it is rejected. In many cases, this testing procedure is not viable (for lack of statistical information or because the structure of the theoretical model is too complicated...). An alternative technique to empirically assess the predictive power of the theory consists of solving numerically a *calibrated* version of the model, and compare the results with the empirical evidence. The qualification that the model is *calibrated* means that the economist assigns a priori "reasonable values" to a number of exogenous parameters of the model (for example, those describing the productive technology), in such a way that they are consistent with independent estimates obtained from other works. The model is then simulated, and a number of statistics of interest are computed for the model economy, and compared with the corresponding real figures. The extent to which these statistics are close to each others determines the success or failure of the theory. This technique was also adopted to provide an empirical assessment of our theory.

In particular, in Marimon and Zilibotti (1997a) we construct two model economies which *only* differ by the extent of the unemployment insurance. One economy, LF, is assumed to provide no unemployment insurance, and is interpreted as a stylized US-type Laissez-Faire economy. The other economy, WS, can be thought as a typical Welfare State-oriented European country, and has a standard system of benefit provision of unlimited duration (of the order of 50% of the wage of a low-paid worker). The two economies are identical in all other respects.

We then proceed to change the economic environment, by letting a common shock hit both economies. To be specific, we increase the productivity differentials between jobs for which a worker is suitable and jobs for which he is not.[5]

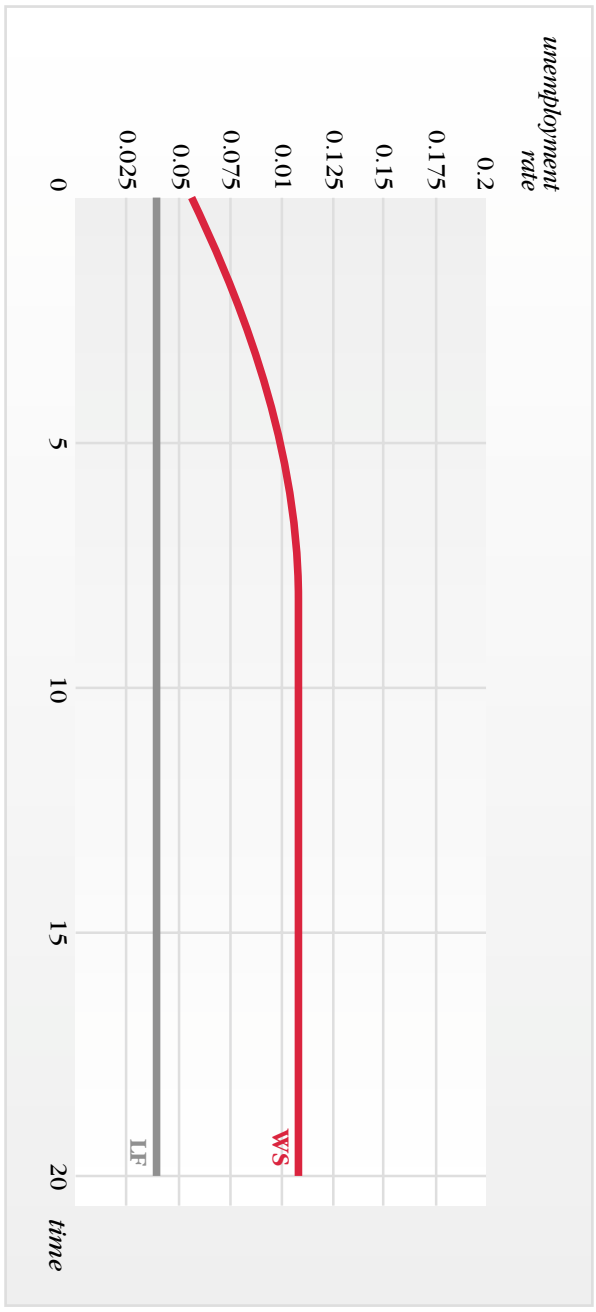

Figure 1: Dynamics of unemployment

The simulated time evolution of the two key variable, unemployment and output, is reported in Figure 1 and 2, respectively (n.b.: the time unit corresponds to a quarter). In LF (lower trajectory), unemployment remains approximately constant, whereas in WS (upper trajectory) the unemployment rate rapidly grows and settles down at the new higher long-run level. As far as the evolution of GNP is concerned (Figure 2), the two economies start from very similar levels, and WS (trajectory which first decreases and then increases) reaches some higher GNP level at the new long-run level. However, the cost of this better long-run performance is a sharp initial recession. The GNP in WS remains below that of LF (trajectory which always increases) for about ten years. Twenty years after the shock, all variables in both economies are very close to their respective long-run values.

Some statistics for the initial (*the 60's*) and final (*the 90's*) situation of the two simulated economies are reported in Table 1. In the initial period, when all workers accept a wide range of jobs in both economies, the average duration of unemployment is about four months in LF, and 5.5 months in WS. The wage distribution is very similar in the two countries, and so are output and productivity. Note that total output is initially slightly larger in LF than in WS. Twenty years after, the contrast is much sharper. The unemployment rate remains almost the same in LF (3.8%), where workers continue to accept a large range of jobs, but increases substantially in WS (11%), where workers switch to a more selective job search strategy. These figures are rather close to the real data of the United States and Europe (ca. 4.5% and 11%, respectively). The average duration of unemployment remains constant in the laissez-faire economy, while it doubles in the welfare-state economy. The share of long-term unemplo-

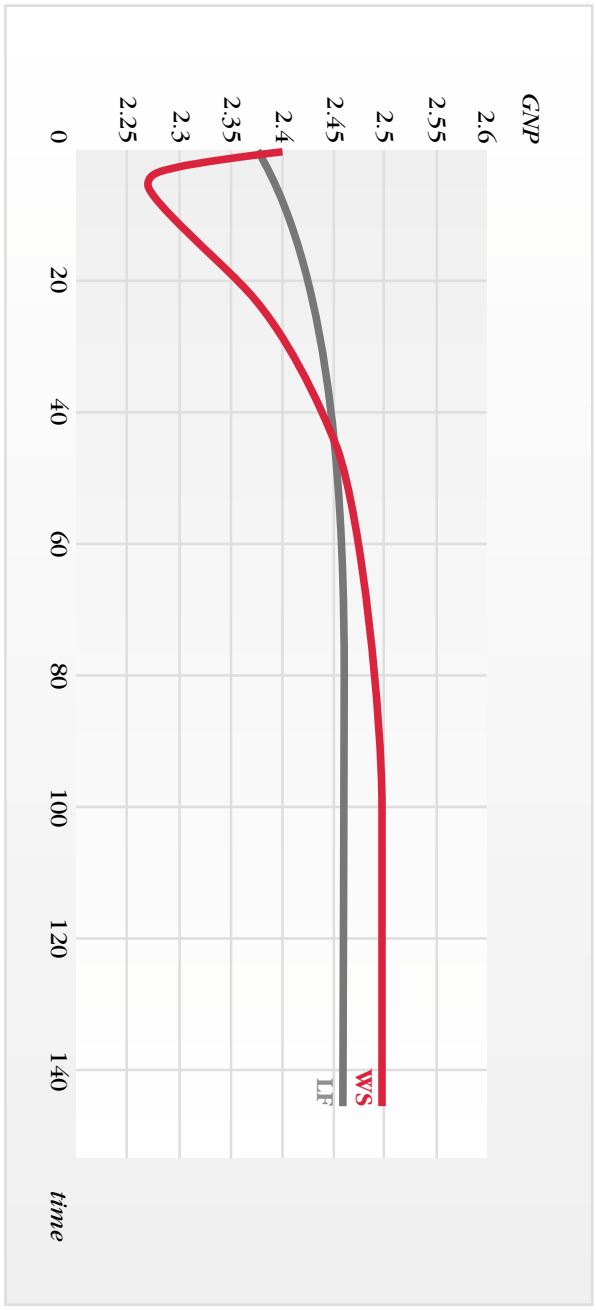

Figure 2: Dynamics of GNP (detrended trajectories)

yed grows substantially in WS, where about half of the unemployed workers has to wait for more than six months before finding an acceptable job, while 23% has to wait for more than a year. The same share does not change in LF. This different responses of the average duration of unemployment and share of long-term unemployment are also broadly consistent with the patterns observed in the reality.[6]

Although workers experience longer unemployment spells in the welfare state economy, they are assigned more efficiently to jobs. This is reflected in productivity growth, which is about 1% per year in LF, while it is 1.5% in WS. The productivity gap is of almost half point percentage per year. The gap between productivity growth in

Table1. Comparison between the two *model* economies.

		the 60's	the 90's	% change
Unemployment rate	LF	3.9	3.8	
	WS	5.4	11.0	
Average duration of unemployment (months)	LF	3.9	3.9	
	WS	5.4	11	
Average productivity per employed	LF	2.05	2.56	22.3
	WS	2.07	2.81	30.6
GNP	LF	1.97	46	22.4
	WS	1.96	2.51	24.6
Percentage of unemployed with spell ≥ 6 months	LF	13.1	12.5	
	WS	22.9	48.2	
Percentage of unemployed with spell ≥ 12 months	LF	13.1	12.5	
	WS	5.3	23.2	
Percentage diff. highest-lowest wage	LF	12.0	19.3	7.3
	WS	14.8	16.3	1.5
Percentage diff. 90th-10th wage percentile	LF	9.7	15.8	6.1
	WS	9.6	13	3.4

the US and in Europe is about 1.1% per year, so the model correctly predicts the sign of the difference although it only accounts for half of the observed difference. Note, additionally, that total GNP growth is larger in WS than in LF. Remarkably, in this numerical simulation, the economy with 11% unemployment rate is more productive than the economy with 3.8% unemployment rate. The size of the mismatch effect is quite large.

Table 1 also shows that the model correctly predicts the qualitative changes in wage inequality, although the quantitative effects predicted are fairly small. Wage inequality increases more in the economy without unemployment insurance than in the one with insurance, and this is true for both the ratio between the highest and lowest wage and the ratio between the 90th and the 10th percentile. The explanation of this difference is that while in LF many workers accept jobs which are highly unsuitable to their characteristics, and therefore receive a low wage, in WS poor matches are rejected. This shrinks the wage distribution. Thus, although the nature of technical change is intrinsically unequalizing, this is almost entirely offset by the changing attitude of job seekers in the welfare state economy. In the country with no insurance, instead, the wider productivity gap is entirely passed through to increasing wage inequality between the lucky agents who have found good matches and the unlucky ones who have found bad matches.

Winners and loosers

In Marimon and Zilibotti (1997a), we also address some questions concerning the distribution of welfare gains under alternative policy regimes. The following exercise yields some particularly insightful results. Take the Welfare State-oriented economy in the 70's and let the technology shock hit it. As we have seen, the after-shock evolution of the economy (as in figures 1 and 2) depends on the extent of unemployment insurance. Imagine that all agents can rationally forecast the evolution of the economy under the alternative policy regimes. Would they prefer to preserve or to abolish the unemployment benefits system when the shock occurs? In our work we show formally the intuitive result that the agents' preferences will not be unanimous with respect to this issue. The choice of each individual will generally depend on her individual status (unemployed, employed with a good job, employed with a bad job, etc.) at the moment in which she is called to decide.[7] In general, the Welfare State option receives the support of the unemployed and the "poor workers" and the opposition of the "rich workers". The question which we have asked is then: given this conflict of interest, which share of the population would have opted for preserving the Welfare State immediately after the shock? According to our simulations, about 54% of the employed workers, together with all the unemployed (about 5% of the workforce), would have preferred to maintain the provision of benefits rather than abolishing it.

The finding that a majority of the workers would have supported the Welfare State is per se interesting, although we grant that the quantitative extent of the support may vary if we change some features of the model. But the findings enlightens a more general point. A great deal of the econo-

mists' recommendations about reforming the Welfare State has been so far based on the predictions of aggregate macroeconomic models. But these reforms entail important distributional effects: reducing unemployment insurance would benefit some social groups while harming others. Understanding better the distributional implications, as well as the so-called *political economy* of the Welfare State -i.e which political majorities or social coalitions support some institutions or block their reform- is at least as important as assessing the effects of these institutions on economic performance.

Conclusions

The performance of Western European and North American labor market has been very different throughout the last quarter of century. If Europe has experienced a large boom of unemployment, the United States have suffered with a substantial increase of wage inequality and poverty. Both phenomena have raised substantial social concern. In this article we have argued on the basis of the result of our previous investigation that the two issues are deeply interlinked and originate from the same change in the world economic environment. We attribute the different responses observed on the two sides of the Ocean to the different extent and pervasiveness of Welfare State institutions, in particular unemployment insurance.

On the basis of the results of our research, we have come to question the widespread view that the virtuous performance of the US labor market in keeping unemployment low indicates unambiguously to European governments the way to fight unemployment. There are no easy receipts to bring the European unemployment back to the levels of the 60's without raising other difficult problems. All projects of reform of the Welfare State which are currently under discussion in Europe should be accompanied by full awareness of all relevant trade-offs. In particular, targeting unemployment rates without considering other aspects (mismatch, wage inequality) may be the wrong guideline, if the reformer aims, as she should, at improving the social welfare.

The political economy of the reforms should also be more carefully considered. Reducing the provision of unemployment insurance has effects not only on the efficiency of the labor market (effects whose direction is, as we have seen,

generally ambiguous), but also on income distribution. If these effects are not offset by compensating social policies in favor of the losers, the reforms can encounter large scale social resistance which can, in turn, threaten their viability.

Footnotes

** This article was written in September 1997 and comes from research carried on within the framework of CREI. The first part of this research has analyzed in detail the difference between the labor market experiences of ten European Countries. The findings of this work are summarized in the first Opuscle del CREI, Marimon (1997), and discussed in more detail in Marimon and Zilibotti (1997b). The second part of this project, has focused on the contrasting experience of the labor markets in Europe and the US over the last twenty years, and is discussed in this Opuscle. A more detailed and technical account of the issues discussed in this article can be found in Marimon and Zilibotti (1997a) on which this work is largely based. The results of all parts of the project are the fruit of a collaboration with Ramon Marimon, and indeed this article has benefited substantially from long discussion together. I wish also to thank Andreu Mas-Colell and María Sáez Martí for their comments. All remaining errors are my responsibility.*

(1) Furthermore, in the model presented by this author, an unregulated economy produces always an inefficiently too high proportion of bad-to-good jobs. In this world, labor market regulation has a rationale.

(2) Our view is echoed by the recent CEPR Report (1997) on European unemployment, which concludes that "... European labor markets (...) seem to be a long way from the stagnant and sclerotic form they are so often painted." (p. 9).

(3) Ljungqvist and Sargent (1997) argue that the distortionary effect on search incentives of benefit compensations in Europe has been a crucial element to determine the boom of unemployment in the 80's.

(4) As usual, the construction of a formal model forces to put on some "blinkers", namely to focus on some aspects and to neglect others. Our analysis only considers some forms of heterogeneity and mismatch, without considering others which may be also very important in the real world. For instance, workers typically differ by skill acquired through education, family environment, firm training etc., while in our work each worker simply is more suitable to some jobs than to some others. These are all very important issues that should be considered and that we plan to analyse and integrate in our future work.

(5) As explained above, the parameters of the model are calibrated to match some empirical observations. For instance, the annual real interest implied by the parameter choice is 6%, while the average duration of a job match is about six years. Both economies have an underlying trend of labor productivity of 1% per year. Given parameters, the two economies have initially -the early 70's- fairly similar unemployment rates (5.4% for the WS, 3.9% for the LF). In the initial period (the early 70's) each agent is 25% more productive in her best than in her worst occupation. Then, as the episode of unexpected mismatch-biased technological change occurs, this differential goes up to 45%.

(6) The dimension in which the model is quantitatively least successful, is in predicting the level of long term unemployment in Europe. Long-term unemployment was remarkably higher in Europe than in the US already in the 70's, when our model predicts moderate differences. Furthermore, the observed long-term unemployment in the nineties is larger than what is predicted by our model. In 1989, about 70% of the unemployed in Europe had to wait for more than six months before finding a job (vs. 48.2% in our model), and about 50% had to wait for more than one year. One of the simplifications of the model that can explain the difference between real and simulated behavior is that we ignore workers whose skills become obsolete and experience for this reason very long unemployment spells. But, overall, the predictions of the model are pretty much in accordance with the evidence.

(7) We assume that all agents have to pay through higher taxes the financing of the public provision of unemployment benefits.

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2. **Reducing Unemployment. At any Cost?**
   Fabrizio Zilibotti (December 97)

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