Maastricht 2042 and the Fate of Europe

Toward Convergence and Full Employment

by

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Abstract: This paper presents a strategy of economic convergence for Europe. European principles and ideals require convergence, but the pan-European economic policy of "labor market reform" imposes divergence, in the hope that greater inequality in European pay will bring Europe closer to the dynamism and employment performance of the United States. We resolve this European paradox by showing that in fact the (inter-regional) pay structure of the United States is substantially more egalitarian than Europe; convergence toward American inequality levels will therefore require the systematic reduction of inter-regional pay differentials across Europe. We present quantitative targets for a strategy of egalitarian growth and pay convergence across the regions of Europe through 2042, the fiftieth anniversary of the Maastricht treaty. A theoretical section explains why such a strategy, following the experience of the American New Deal, should work to reduce the scourge of European unemployment.

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I. **The European Paradox**

Why does – *why should* – any country wish to join the European Union? The answer is plain: *to become European*. And what does that mean? If it means anything, surely the European dream is to be stable, democratic and prosperous, with a touch of the "social model" that is supposed to distinguish Europe from the United States. This is obvious, and not only that: it is spelled out explicitly in the founding documents of the European Union.

For the presently less-prosperous and, to the East, quite poor regions of the EU, becoming European requires that they catch up, toward the living standards presently prevailing in the West. It does not require equality. Living standards in Poland will never equal those in Germany, because the industrial and financial core of Europe will never move from Germany to Poland. But the European project does require that the gap between Poland and Germany narrow over time. It also requires that the dramatic gaps separating wage levels in Estonia and Bulgaria from those in Spain or the Czech Republic be narrowed, even as the Spaniards and Czechs reduce the gaps separating them from the truly rich.

This we may call the imperative of convergence. This paper explores that imperative over a relatively long time horizon, stretching out to the fiftieth anniversary of the Maastricht Treaty in 2042. Will that landmark be truly a Golden Jubilee? Or will it prove nothing more than a sour footnote in the record of a failed endeavor? That question is facing Europe today. The answer will depend, in part, on whether the convergence imperative is recognized and realized between now and then.

Mathematically, the convergence imperative imposes a simple condition: growth of wages and incomes must be inversely proportional to present wage rates. Those who are rich should grow more slowly than those who are less rich, and those who are poor should grow the most rapidly of all. This does not mean the rich must stagnate. But if their wages and incomes grow, then those of the poorer countries and regions must grow more rapidly still. The achievement of *equal* growth rates across regions, while it would be a step in the right direction for many, is not good enough. With equal growth rates, proportionate differences are preserved and absolute differences grow over time.

Convergence will not just happen. It must be made to happen. And that means it must be part of the economic policy agenda for Europe. But here we encounter a problem. Consider the economic policy prescription being advanced across all of Europe, under the unanimous advice of national governments, the European Union, international institutions such as the IMF and the OECD, the media and of course a phalanx of economists, most of them safely protected by academic tenure. This is the project of *labor market reform*–aimed, it is said, at reducing the mass unemployment afflicting so much of Europe today.

Labor market reform follows a logic familiar to every undergraduate who has ever taken an introduction to economics. Labor markets are supposed to operate under the guidance of supply and demand, with supply curves sloping upwards (mostly) and demand curves sloping

downwards (always). If there is unemployment, the cause must lie in a failure of the real wage to adjust to its equilibrium value. Perhaps technological change and other factors have cut demand for workers equipped with relatively limited skills. To restore full employment, wages paid to such workers must decline. This can be accomplished by weakening unions, cutting job protections and unemployment benefits, and otherwise dismantling the market power that democratic governments have rashly allowed to accumulate in the hands of the unskilled.[1]

Given that real wages for unskilled work are too high, the remedy must be to reduce them. Labor market reform is the instrument for this reduction. Necessarily, the pay gaps separating skilled from unskilled labor must increase. The program of labor market flexibilization envisages kicking the props out from under worker power in whatever form it exists. That form varies from country to country, with relatively low-income countries (such as Spain) favoring job-tenure protections (which do not impose accounting costs on the state budget), while the richer countries (such as Denmark) place more emphasis on unemployment benefits and a compressed distribution of wages. To cure unemployment, it is said, all of this must change.

In the medium term, the flexibility project envisages reaching levels of inequality characteristic of a "dynamic" capitalist economy. And for this, Europeans see a model--when they gaze across the Atlantic at the United States. *The American Model stands as the template for the degree of inequality that must be achieved, in order to enjoy American full employment.*

A second truism of current economic discussion is globalization. As everyone knows, the boundaries of the economy are no longer to be found at the national frontier. We live in a global economy, and workers must therefore face the harsh reality that they compete not only with their compatriots but with all workers of similar productivity, wherever found. This must be doubly true within the confines of the European Union, which lacks even the modest between-country protective barriers of other times and places.

This truism carries a clear implication. We observe, first, that unemployment and under-employment are typically even higher in the peripheral regions of Europe, especially in the accession countries, than in the relatively prosperous core countries. We observe also that in many of those countries, educational attainment is comparatively low. According to the logic of supply and demand, this must mean that the productivity of those countries does not justify, or at best barely justifies, the wages that workers in those countries presently make. It therefore cannot justify rapid increases in those wages over time.

Worse still, consider what happens when unskilled workers in (say) France accept pay cuts, as the doctrine of labor market reform dictates that they must. If workers in Poland fail to follow

[1] To the untutored, a claim that serious monopoly power is held by the mass of low-paid, unskilled workers may seem strange. One might think that market power would be more likely to accumulate in the hands of, well, monopolies--that the benefits of monopoly are more likely to be found in the stock options of executives than in the pay packets of the assembly line. But to think this way is to misunderstand the logic of supply and demand. *Given* that there is unemployment, it must be the case that real wages are too high. And this proves, without further recourse to evidence, that the problem of monopoly is a problem of worker power. Conversely, as no chief executive is ever fired for demanding too much money, that is proof that the market for CEOs clears at the competitive price. In some matters, it may be better to remain untutored.

suit, then in relative terms they must lose competitiveness, *vis à vis* their low-skilled counterparts in France. If previously Poland had been attracting jobs from France due to lower unit labor costs (at the margin), that benefit may be lost. Faced with wage cuts in France, to maintain position, *the Poles must also reduce their wages*.

So speaks the logic of globalization, combined with the logic of labor market reform. And since low-productivity workers are a larger share of the Polish workforce than of the French, wage cuts must be more widely applied in Poland than in France. A similar logic applies further down the chain. If Poland cuts wages, then Estonia must cut wages as well, affecting an even larger share of its workforce, than was the case in Poland. Unfortunately, the consequence of this logic is **divergence,** and declining relative pay rates in the currently poor regions of Europe.

This is the European paradox. **European ideals require convergence. But European policy, and particularly the policy of labor market reform, imposes divergence.** It imposes divergence between the well and the poorly-paid in the rich countries, and by the logic of globalization it imposes an even-greater divergence between pay in the richer and the poorer countries. Of course, pay is the largest part of income, and income is the most important determinant of living standards. It follows that the application of labor market reform in Europe must mean *slower* growth of incomes and living standards in the poorer countries. Logically, then, we reach the conclusion. *The accession countries have joined Europe only to discover that European economic policies require that their relative incomes fall, not rise, compared to the starting position*.

This is an impossible position. A contract, signed on the European principles and confronted later with the actual policies, would be ruled fraudulent. It would be invalid in any competent court in the world. An attempt to enforce it would rightly be met with intense resistance.

Actual European policy cannot operate indefinitely on these grounds. It is mathematically and humanly certain that rising income gaps between rich and poor countries will stimulate the migration of the poor to the rich. Sooner or later, if there no convergence of incomes between regions, this will develop into a full-scale convergence of populations among them. For practical economic purposes, the poorer countries will cease to exist except as tourist destinations. The richer ones either will become melting pots, admitting the citizens of all Europe to full political rights, or they will become ethnic oligarchies, modern versions of apartheid South Africa. In either case, both groups of countries will completely lose their present character, for good.

And the other possibility, if European economic policy continues along present lines, is that the European Union will disappear. It is already politically stagnant. It has already lost the grip on idealism that it had as recently as twenty years ago. It is already engendering a nationalist and xenophobic backlash in many places. A lesson of the past two decades is that when failed states collapse, the effects can be economically catastrophic, as they were in the Soviet Union, or catastrophically violent, as in Yugoslavia. Europe is not yet a state, but it is not immune to one catastrophic possibility, or the other.

For these reasons, we take the position that the European project, which is in crisis today, must be saved. It must be saved, most of all, from itself. And this means that the paradox of

Europe must be overcome. The question is: how to do it? An answer to that question requires a reexamination of the underlying economics. This will be surprising exercise for many readers, and perhaps a difficult one, for it is not easy to break free of the ingrained logic of supply-and-demand economics nor the grip of factual preconceptions. But as we go along, we will show that this "struggle to escape" is not only necessary, but urgent. For it is not the case, as a point of theory, that supply-and-demand economics rule in the market for labor. And it is not the case, as a point of fact, that the United States represents an end-point of high inequality in the structure of pay, compared to modern Europe.

II. **The Economics of Inequality and Unemployment.**

In this section, we shall state and document the following propositions.

1. The theory of unemployment underlying the policy doctrine of labor market reform is fallacious, and its implication, that jobs are purchased with inequality, is incorrect.

2. Across Europe, the opposite relationship holds: countries and regions which are *more* egalitarian systematically enjoy *less* unemployment. This is not an anomaly, but entirely in accord with correct principles of economics.

3. The claim that the United States has a pay structure more unequal than that of Europe is false. All calculations to date which purport to show this are based on pairwise comparisons between the *entire* United States and *individual* countries of Europe. This invalidly compares a large country with many very small ones, and it excludes consideration of the large inequalities that exist *between* European countries. When these are added in, the pay structure of the United States emerges as *more egalitarian* than Europe. Measured *geographically*, across states and regions, pay in the United States is dramatically more egalitarian.

As widely believed, to move Europe toward American inequality levels would help move Europe toward American levels of employment. BUT, to achieve this goal, it follows from the previous point that *inequalities within Europe must be reduced*.

This is the resolution of the European Paradox. There is in fact no contradiction between the ideal of Europe and an efficient economic policy tending toward full employment. Nor is there any contradiction between the lessons of U.S. experience, correctly measured, and what is good for Europe. The contradiction is only between the policies that are required and what, so far, the elites of Europe have believed.

Moreover, in the late 1990s the United States achieved full employment while reducing inequalities in its pay structure, not by increasing them. The task remains to adapt this principle and experience effectively to European institutions, overcoming the true rigidities of Europe. These are not in labor markets but mainly in the credit and financial systems, in the public sector, and in the failure so far to recycle purchasing power effectively across the full extent of the EU. Most of all, as noted, they exist in the mind-set of European policy-making elites.

1. Why the Conventional Theory of Unemployment in Europe is wrong.

The problem of unemployment in Europe is vexed by a theory-driven predisposition to blame it on defects of labor market structure–"rigidities"–and then to go out in search of particular rigidities to blame. A great part of the economic literature follows this pattern, but the result has been a wild goose chase. Repeated attempts by the most convinced advocates of the rigidities doctrine have failed; it is now clear that national differences of labor market institutions cannot effectively explain the existing pattern of variations in unemployment. Garcilazo (2005) provides an exhaustive survey, including examination of the underlying data sets used to measure differences in institutions across European countries. These are of very low quality, and they do not inspire confidence in empirical generalizations that might be drawn from them.

In a published review of the empirical literature, Baker, Glyn, Howell and Schmitt (2004) show that the entire power of institutional explanations for unemployment differences across Europe rests on one fact. It is true that centralized collective bargaining and union density are associated with unemployment. But the effect is that stronger unions are associated with *less*– not more – unemployment. This is no help for the rigidities doctrine.

This section presents a simplified discussion of theoretical issues. It asks whether the conceptual framework within which the preoccupation with rigidities arises–though extremely well-known and instinctively accepted by most people-- is actually coherent.

To begin, we review the standard theoretical categories of unemployment, both neoclassical and Keynesian. We then take up an alternative perspective, emanating from development economics, with a contribution from the Swedish School. According to this model, unemployment, inter-sectoral inequalities and migration flows are linked. In this alternative framework, unemployment arises when increasing inequalities induce increased search for better jobs--including migration. With minor modification these models are applicable to modern Europe, and will become even more so as European integration progresses. The implications are consistent with what Baker *et al.* have already found: that egalitarian policies can reduce unemployment. If it turns out that further evidence supports the hypothesis, then conclusions must be drawn, and the fetish of rigidities should be abandoned.

Voluntary and Keynesian Unemployment: A Brief Review of the Old Debate

In the textbook theory of labor markets unemployment is voluntary. Workers may leave their jobs to look for another. They may refuse to work at the prevailing wage, while looking for better work. Or they may find that some larger social power–the government or a union--has set the prevailing wage too high to justify their employment. In the first two instances unemployment is a matter of personal choice. In the third, it is a matter of social choice.

The first type is "frictional" unemployment. Frictional unemployment is generally supposed to remain at stable background levels for the society as a whole, but to resolve itself for most individual workers after a short time. The background levels reflect the efficiency of job search mechanisms and other institutions, which may possibly be improved by structural reforms and new technologies. But the case for such improvements is rarely considered urgent, and a failure

to implement them does not make frictional unemployment involuntary.

Most workers who decline to work at the prevailing wage are simply non-participants in the labor force. But if such a worker actively searches for employment, holding out hope for a higher market wage than productivity would justify–or pretends to do so in order to qualify for an unemployment benefit–she may be counted as unemployed. In certain national systems, an appropriately qualified worker who has left or lost a job (or seen a contract expire) may register for unemployment insurance or other labor market benefits, and in this way also qualify to be counted as unemployed.

To call this type of unemployment "voluntary" presupposes that the worker could find work at a lower wage. He need only be willing to acknowledge the realities of his market value. That he does not do so is hardly *anyone else's* fault. One may sympathize with *employers* under these conditions, as they cannot attract all the workers they might like at a wage low enough to make the employment of those workers profitable to the firm. But it makes little sense to shed tears over the workers, still less to direct policy toward finding them jobs at the wages they happen to prefer, but that their productivity does not justify. In a market system, one is not entitled to cause one's employer a loss.

The institutions of the welfare state-- in particular a more generous system of unemployment insurance (UI) benefits–will logically *increase* the volume of unemployment of this type. UI subsidizes leisure and encourages workers to hold out for a higher wage. If workers *could* work at the prevailing wage, then a reduction in the subsidy to leisure is a sufficient condition for a reduction in unemployment. This model of unemployment presupposes that more jobs, in the aggregate, would be available if wages were lower. It is the model underlying the recent proposals in France for cut-rate jobs for those under the age of 26.

But if, on the other hand, more jobs in the aggregate are not actually available at that wage, reducing UI merely reduces the disposable income of the unemployed., while cutting wages for certain categories of workers merely substitutes those workers for others in existing jobs, and reduces the aggregate wage bill. (This was the burden of student and worker objections to the French scheme.) In the real world, and certainly in Europe, jobs rarely go begging for workers; no one argues that firms have trouble finding employees when they want them. Therefore, the practical importance of this second type of unemployment cannot be very large.

The third type is more troublesome. It occurs when workers actually desire to work at the prevailing real wage, but employers do not believe them to be sufficiently productive to justify that wage, and the normal market response, namely the bidding down of wages to an equilibrium level, is blocked by some barrier in the labor market. Minimum wage laws and trade union contracts are standard examples of rigidities thought capable of producing this effect. Job protections might also have similar effects, if they permit incumbent workers to force up wages to the point where firms cannot earn profits by hiring new workers.

In this case, jobs are *not* on offer. Supply of labor flatly exceeds the demand. The individual worker cannot find work even though she may be willing to work for less. She may feel frustrated and unhappy. Nevertheless, a "correct" theoretical statement still holds her

unemployment to be voluntary. The workers could have chosen other social arrangements. The unemployed have no one to blame but their stubborn comrades, who will not reduce wages in order to permit the creation of jobs.

This is the prevailing form of voluntary unemployment in the imagination of modern Europe, its media, its economists, and its policymakers. It justifies the campaign for "labor market reform." It has been forgotten, however, that *The General Theory of Employment Interest and Money* took aim at this third case--and destroyed it on logical grounds.

Writing at a time when unemployment insurance was minimal, John Maynard Keynes would not have considered my second type of unemployment worth bothering about. Nor was he much interested in frictions, which cannot account for joblessness on a mass scale. But the claim that workers could cure unemployment by accepting a reduction in their wage rates underpinned the classical response to the Great Depression, just as it does the neoclassical response to mass unemployment today. Keynes had to deal with it, and he did.

Keynes pointed out that since the theory posited a labor market which cleared in *real* terms, it should be possible to reduce real wages equivalently either by reducing money wages or by increasing the money price of wage goods. The first path could be blocked by striking against wage cuts (as the French students and workers recently showed). But the second path could not be blocked: workers rarely react to a little inflation. Therefore, so long as the authorities retained some influence over prices of wage goods, it would not be difficult to fool workers a little bit, reduce real wages with a bit of inflation--and cure mass unemployment! Workers' acceptance of *money* wage cuts was not essential, and their resistance to them was not decisive. And it would, of course be utterly foolish to forego full employment simply from fear of a minor amount of wage-goods inflation.[2]

This argument has weaknesses, but Keynes also had a second one, which rested on the fact of markup pricing. If workers did accept money wage cuts, there would follow a fall in money prices. The effect of falling prices would be to obviate the effect on real wages. Thus, Keynes argued that workers not only *did not* but also *could not* make a wage bargain in real terms. Instead, workers merely accept the aggregate volume of employment offered by employers at a given, conventionally fixed structure of money wages. This, he argued, was the way employment is determined in the real world.

Under these conditions, it followed that the total volume of employment could be increased very simply: by inducing employers to offer more jobs at the same money-wages. And if that were so, Keynes argued, then the previous unemployment would have to be considered *involuntary*. Ever since Keynes, policymakers in the United States have responded to unemployment *as if* they believed in this possibility. They may, for instance, cut interest rates or income taxation in

[2] This possibility led later to great debates over adaptive and rational expectations, and to the counter-argument that any effort to generate a little inflation would necessarily spin out of control. It is hard to take that view too seriously anymore; a more cogent objection to Keynes's remedy is that it is really quite difficult in today's economy to generate inflation at all. But then, of course, there is no barrier to the direct provision of the needed jobs through fiscal policy or an employer-of-last-resort scheme.

order to induce consumers to spend and businesses to invest. Or government may spend more. Even the most orthodox Republican policymakers are not above exhorting the American household to go out and spend, in the hopes of reviving aggregate effective demand and overcoming a temporary shortfall in total employment.

This is the common practice but at the level of discourse it is widely overlooked, especially in Europe. In the journals and in the media, not to mention in the advice offered by institutes of "wise men" to governments, unemployment is almost always linked not to demand, but to the flexibility of labor markets. This is, of course, a euphemism for the ability to cut wages, benefits, and job protections. Indeed policies to "reform" labor markets are routinely announced, and they always fail. The conditioned reflex then pronounces them insufficient, and more drastic remedies are then prescribed. .

The theoretical economists of the neoclassical school nowadays have meanwhile not so much rejected Keynes as tried to pretend that his arguments were never made in the first place. They are much concerned to airbrush macroeconomic activism from the pages of history – as Trotsky was disappeared by Stalin. Robert Lucas's 2003 presidential address to the American Economic Association is in this vein. For these theorists, *only* more flexibility can reduce unemployment. It is not clear how such thinkers reconcile their views with Keynes's assault on a real-wage clearing labor market, since they rarely display awareness of the actual content of his critique.

Keynes's disappearance has been abetted by the behavior of some economists who purport to be his successors. The rump who hold quasi-Keynesian policy views (for instance, via the doctrine of "efficiency wages") tend to favor *both* expansive demand policy and some measure of "labor market reform." The former is to be pursued especially when the latter is, for various reasons, impractical. These economists thus face both ways: left toward budget deficits and low interest rates when necessary, and right toward "reforms" aimed at rolling back the welfare state. With this group identified as "New Keynesians," there is no influential school of economists who argue *against* more flexible labor markets.

Today, Keynes's own critique of that view, resting on the fact that wages are set in money but not in real terms, remains valid as it was in 1936, and so the textbook labor market view of unemployment is plainly wrong. On the other hand, the quasi-Keynesian position described above is actually self-contradictory. *If increasing labor market flexibility means lowering wages for low-productivity jobs, which it invariably does, the general effect will be to increase rather than reduce unemployment, reducing the effectiveness of expanding aggregate demand.* The reasons will be discussed below.

This suggests that the correct position is one almost nobody takes: that increasing wage flexibility has nothing to do with reducing unemployment. On the contrary: equality helps employment and inequality hurts it. Moreover, appropriate measures to expand the demand for labor by increasing spending also make labor markets *more*, rather than less, egalitarian. They *reduce* the wage flexibility so prized by commentators and wise men. Furthermore, measures that reduce inequalities *per se* will also tend to reduce unemployment. They will have this effect, quite apart from any impact on aggregate effective demand.[3]

[3] A familiar argument holds that redistribution from higher to lower incomes raises the propensity to consume, but

It follows that all significant forms of unemployment are subject to policy control and so are involuntary in Keynes's meaning. Unemployment can generally be reduced, if not eliminated, by the quite simple expedient of creating jobs at the prevailing wage. The real objection to this policy is not on the labor-market economics, but to the politics of empowering and expanding government to accomplish this goal. It is to the often dreary and misdirected character of the work that government projects undertake, and to the interference that inevitably results with spheres of economic activity that private enterprise would like to maintain for its own. These are legitimate objections. But they are objections best met by imaginative policy design, to help assure that the new employments actually accomplish something worth having. Keynesians long argued that pointless employment was better than no employment at all– but there is absolutely nothing in that case that precludes creating good and useful employment for those presently massively un- and under-employed. Keynes himself always argued that this would be better; makework was, for him, never more than a last resort.

Why Flexibility Will Never Cure Unemployment

Let's examine the flexibility hypothesis in more depth. Why do people become unemployed? The phenomenon did not exist in pre-industrial society. Unemployment-as-we-know it emerged with the industrial revolution, took its definition from American statistical practices in the late 19th century, and became a mass phenomenon – worthy for the first time of concentrated attention from economists – in the Great Depression of the 1930s. Why?

It makes no sense to point to the creation of unemployment insurance and similar institutions as a *cause* for the rise of unemployment. UI was not invented before unemployment.

Equally clearly, the standard supply-and-demand diagram, with wages set above the market-clearing levels, cannot account for the emergence of unemployment in the industrial age. Real factory wages in the 19th century were not protected by laws or unions. Real wages were low, as any reader of Marx or Dickens knows. Moreover, workers had other options. If they had migrated from Europe to the slums of New York, they could still move on, after a short time, to the American West. Yet in many cases they did not. Instead they formed up, more or less willingly under the circumstances, into the "reserve army of the unemployed." And that army existed, even though industrial production grew rapidly, even though the time was not one of depression and stagnation in output and demand. Why?

The textbook view must hold that even though real wages were very low, they were nevertheless too high. Since the workers most likely to face unemployment in this model are those *least* productive, it follows that wages for the least productive workers should have been made to *fall,* in order to give each worker a job commensurate with his or her skills. This can only lead to a greater inequality in wages than existed previously. The calls heard in Europe for "increased flexibility" today are of the same type. They are calls for increased pay inequalities, as a direct route toward full employment equilibrium.

And yet, it is almost always possible in principle for an unproductive worker to let his wages fall.

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this is arguably a weak effect and is not part of the case being made here.

Out-of-work academics know this very well: they become consultants. Ex-graduate students can wait tables. Secretaries become temps. Former farm boys can–in the most extreme cases–go back to the farm. More generally they can work off the books, mowing lawns and weeding gardens.

If they do not do so (and many do not)–if they accept unemployment-- it may be because such inferior jobs stand in the way of one's chances of finding better work. At any rate, given the existence of an informal sector, dropping wages in the more formal sectors to the levels of the informal sector *cannot* be a solution, except insofar as it discourages people from leaving the informal sector. If productivity is determined by the capital stock (human and physical) available to workers, then cutting wages only amounts to a transfer of the surplus from infra-marginal workers in the high-wage sectors to their employers.

In general, the rigidities doctrine supposes that unemployment is the only choice open to a worker who declines to cut his real wage to an equilibrium level. It supposes, in other words, that the "job" is something only offered by an "employer." But this hardly the normal case. If workers have the option of self-employment, whether in agriculture or in services, in the formal or cash economy, then the rigidities framework runs into trouble. Workers may be "choosing" unemployment over work options that are open to them but that are unsatisfactory because they reflect the (low) productivity of work when *unassisted* by capital and large-scale organization. So we have today a theory of unemployment that cannot account either for the emergence of the phenomenon in the first place, nor for the standard practices in a services economy. And we have a neo-Keynesian alternative, that equally overlooks, for the most part, the flow of workers into and out of the industrial workforce. The neo-Keynesian theory is concerned, mainly, with the unemployment of workers who, at the outset, are already irrevocably committed to industrial life. A satisfactory theory of unemployment, on the other hand, must deal with a world in which the options of organized and of informal employment *both* exist. It must be valid for the developing (which is to say, pre-industrial and industrializing) and also for the post-industrial world. Indeed, it is only when both types of employment are recognized explicitly that one can make sense of the phenomenon of unemployment, and of the empirical relationship between unemployment and pay.

A More General Theory of Unemployment and Inequality

Suppose we find ourselves in a pre-industrial society. A highly egalitarian peasant agriculture prevails (presupposing an abundance of free land), and there is no welfare state. (Imagine the late 18th century United States, outside the South.) Each worker will then live according to his or her abilities and the fortunes of the soil. No one will leave their employment, except to search, very purposefully, for better land. In this egalitarian state, unemployment will not exist.

Now suppose we find ourselves in a workers' paradise of industrial socialism. Once again conditions are egalitarian, not because of an abundance of land but because of the philosophy of those with state power. Education, health care, child care and housing are likewise provided for free. Workers all have jobs if they want them. Part of the reason for this–lax management, lack of a profit motive, and overmanning on the factory floor–is well known. But the other part is that workers so employed have no incentive to leave their present employment and look for better work (except by emigrating). They cannot improve their economic circumstances

materially by trying to change their jobs. So why do it? In consequence, as in the first case, unemployment will again not exist.

Therefore: It is the intermediate cases that cause the trouble.

A half century ago Simon Kuznets argued that inequality would rise in the early stages of economic development and transition to industrial growth. The reasons were not abstract. New urban centers were places of concentrated income and wealth. It was the *differential* between incomes in these places and those in the countryside that would become significant as cities grew, and only decline later as the proportion of the population remaining in the countryside shrank. Such was not the entirety of the theory behind Kuznets' famous inverted-U relationship between income and inequality, but it was surely the most significant single factor.

In 1970 John Harris and Michael Todaro offered a model that captured these characteristics, in a neoclassical paper aimed mainly at development economists (Harris and Todaro, 1970). In this model, workers migrate from a low-marginal-product rural sector to cities where minimum wages are imposed, and accept a high probability of sustained unemployment in exchange for a low probability of getting one of those jobs and enjoying the resulting rise in income. The equilibrium condition is that the expected value of the gain be just equal to the cost incurred in leaving rural employment--and this condition entails substantial equilibrium unemployment.

From this, a *positive monotonic* relationship between inequality and unemployment emerges. As development starts, the riches of the city become magnets for the rural poor. No one on the farm can find an urban industrial job without physically pulling up stakes and heading to the city to look. This everyone with initiative does–and particularly if a shock to farm incomes suddenly makes the inequalities even worse.

But the number of jobs cannot keep up. And so, no matter how rapidly cities grow, mass unemployment is inevitable for a time. It will only end when the rural population is absorbed, or else if that population emigrates. It can only be contained (as in modern China) by a pass system regulating who may live in the cities. And it can only be regulated, effectively, by measures that provide strong incentives to stay out in the countryside or in the smaller cities and towns. (Social security systems, which provide common money incomes to retirees and therefore higher real incomes to those living where staples are cheap, are an example of such an incentive, and one that works effectively to this purpose in the United States.)

But while Harris and Todaro were focused on East Africa, their argument is also adaptable for post-agricultural societies. Such societies have an elite of knowledge and finance workers, a core of manufacturing workers, and a large reservoir of workers in services. Knowledge and finance workers live off the fat of the land; access to those jobs is restricted by cartels and credentialing. The same is not true for manufacturing workers, who nevertheless enjoy wage premia in part due to ability to mine the profit positions of the firms they work for. (This is known as industry specific labor rent.) Services workers enjoy no such advantages, and their pay is largely set by the social minimums of the welfare state. They are like the earlier generation of farm workers in most relevant economic respects, and they may be considered a "reserve army of the *under-employed*." So long as the differentials between service and

manufacturing wages are fairly small, or if it is possible to search for better jobs while working and with minimal cost, services workers may not abandon current employment to seek for better. Still, if the situation becomes sufficiently desperate, they will do so. In that case, measured unemployment will rise; the previous *underemployment* will come out in the open.

The choice facing younger workers is especially stark, since a worker who once enters the low-wage services sector may be "typed" as unambitious, and low-productivity. Such a worker cannot make the transition later so easily as a worker who has never been employed at all. For this reason, young people have an incentive to resist taking bad employment for as long as possible. Youth unemployment in unequal societies should be expected to be an especially serious problem. And unemployment overall will be worse, other things equal, in societies with younger populations.

From the standpoint of the individual worker, the decision to risk unemployment will depend on two parameters: the *difference* between current income and the hoped-for improvement, and the *probability* of attaining that improvement. The former can be measured by the inequality of wages. The greater existing inequality, the greater the potential rewards. The latter depends in part on the rate at which new higher-wage employments are being offered. Thus the worst case for unemployment will be in an unequal society experiencing the early phases of a boom or otherwise hopeful moment; Spain in the 1970s comes to mind. Growth *over time* absorbs the unemployed, but if growth accelerates and then fails, a higher long-term rate of unemployment can result. The "best" case for unemployment may be in a slow-growth society as a long period of equalizing expansion comes to an end. Here the United States in early 2000 offers a compelling example.

In this construction, to repeat, *pay inequality causes unemployment*. Unequal societies should have more unemployment than egalitarian societies. Barriers of mobility across regions will condition how far workers are willing to go to look, and where the unemployment is actually found. Thus, in the relatively unified United States, with a single federal unemployment insurance system, one would expect the highest unemployment in or about the richest places. In Europe, where welfare states remain national and the loss from moving across national frontiers is relatively high, one might expect the unemployed of (say) Poland to congregate in Poland.

Is unemployment so modeled voluntary or involuntary? *In this theory*, the distinction has lost its meaning, for it is purely a matter of perspective. From the standpoint of the individual worker, there is always a choice, to risk unemployment or not to risk it. In this sense, unemployment is voluntary. But at the same time, from the larger standpoint of the society, the aggregate volume of unemployment is endogenous. And at least one critical variable – the inequality of the wage structure – is subject to policy control. Since unemployment can be reduced by policy, without changing the underlying preferences of the workforce, then by Keynes's definition it is *involuntary*, in spite of having been individually chosen.

In our model, then, unemployment is a *positive* function of (a) inequality in the structure of pay, (b) the immediate growth rate of higher-wage employments (not necessarily that of the economy overall), and (c) the proportion of the population below a certain age. One may imagine adding to this a variable (d) for that part of the youth population who are held off the labor market

altogether by keeping them in college, military service, or even prison. Any of these "holding pens" may ease the problem of long-term unemployment. The first two achieve this by allowing young people to remain off the labor market, without stigma, until they can find suitable employment. The third does so by removing hope for any but the most menial employments following release from detention.

Finally, a dynamic element may be added to the discussion. This can usefully draw on Meidner and Rehn (1951), whose work underpinned the conceptualization of the Swedish Model. Rehn-Meidner pointed out another consequence of inegalitarianism in the structure of pay: it permits technologically backward firms to maintain competitiveness, despite higher unit costs, by paying their workers less than will be the case in firms that are more progressive. Thus a high degree of inequality in the wage structure will be associated with a weak degree of technological dynamism, and over time, a lower average productivity and standard of living than would otherwise be the case.

Deliberate compression of wage differentials puts the technological laggards out of business. It therefore releases labor. But with active labor market policies (providing retraining for displaced workers) and a policy of strong aggregate demand, the end result can be an expansion of capacity by the technologically progressive firms,. Some of the unemployed can then be absorbed in the expanding, advanced industries. And many more can be maintained in subsidized, low-productivity employment–either public or nominally private-sector--essentially paid for by the surplus created in the high-productivity firms. In this way, egalitarian societies enjoy efficient use of all their labor resources, high absolute living standards, and competitive advantages over those that allow markets to adjust wages to an existing structure of relative productivities.

To contrast this model of employment and unemployment with the rigidity-flexibility framework, one need only be reminded that the alternative to good employment is not only unemployment, which is what that framework supposes. It can also be *bad* employment–perhaps in some other place, in some other occupation. Bad employment in the informal sector is never precluded, anywhere, by labor market institutions. It is the *differences between the available alternatives* that matter. Some people–not all, but some--will choose unemployment if it provides at least some chance of jumping the gap to a better-paid job. The greater the gap, the more tempting it is to take the risk, and the higher the unemployment that will result.

In short summary, it is not just that full employment tend to reduce inequality. It is also that *inequality* produces *unemployment*. The *more unequal* the structure of pay facing an individual worker, the greater the likelihood that the lottery of unemployment will be chosen over the certainty of an impoverished and miserable life.

Inequality, however, is a feature of society. It is not a characteristic of the individual, but of the environment within which the individual is to be found. And this raises a question of crucial importance, entirely overlooked in the literature. What are the boundaries of the environment? Are they purely local? Are the national? Or are they continental in scope?

This is a subjective matter, but it is clear that as economic barriers fall – barriers between regions, barriers between countries, and barriers of communication and discrimination, the

horizons over which individuals consider their prospects must necessarily expand. This process has been going on in Europe for fifty years – it is in many ways the essence of European integration. And given the theoretical proposition just stated, relating the perception of inequality to unemployment, it is immediately obvious that European integration poses a huge conundrum for European employment.

For, the further one looks in any direction across Europe, the greater the inequality that one observes. It follows that the more Europe integrates, the greater the problem of unemployment will become, unless drastic measures *to reduce inter-regional inequalities* are undertaken. This is the basic economic logic of a convergence strategy.

2. Inequality and Unemployment in Europe

So far, we have argued that inequality of wage rates helps to govern the rate of unemployment. This brings up a point of method, often overlooked, which is of central importance to the problem of unemployment in today's Europe. Inequality *over what range*? The town? The province? The country? Or Europe as a whole? And if the latter, what is Europe, exactly? What is the effect of expanding the sphere of European economic integration on the inequalities experienced and perceived by Europeans?

The importance of this question stems from the fact that Europe experiences different levels of inequality at different levels of geographic aggregation. In many parts of the continent, local or national inequality is low. Scandinavians and Germans take pride in economic equality, and with reason. However, wage differentials between European countries are high. Average income (in nominal terms and common currency units) in Spain is only about 60 percent of that in Germany–comparable to the average differential between American blacks and whites. It follows that making a correct prediction of the unemployment rate expected from any given level of inequality depends critically on drawing analytical boundaries in an economically and socially relevant way. In principle, it is necessary to gauge inequality across the geographic and political range of individuals. And this problem is complicated by the fact that different groups may experience, at a given moment in time, different geographic (as well as occupational) horizons.

Conceição, Ferreira and Galbraith (C-F-G, 1999) showed that there was an uncanny negative correlation, on the order of -0.8, between the late 1970s and the early 1990s (when the collapse of Eastern markets upset it) between European GDP per capita and rates of unemployment. If every country were clearing an internal labor market independently of the others, this relationship could not exist. In that case, national labor markets would have cleared separately, and there would be no association between national productivity and national unemployment. But the relationship existed. Indeed the relationship was highly systematic, excepting only those nations (Portugal, notably) that solve unemployment in large part by exporting their unemployed.

In this sense Poland today is no longer an independent labor market but a province of Greater Europe. The unemployed in Poland are not the unemployed merely of Poland, but the unemployed of all Europe. They are not only the low-wage workers seeking to escape the countryside for Warsaw or Cracow, but also the low-wage workers who cannot find jobs across the vast differentials separating Poland from Germany. Today they may live in Poland because

barriers to international mobility still exist, or because they have not yet located jobs, or because they don't qualify for German welfare. If you have to be unemployed, better do it near home. But if convergence continues to stall, if international inequalities are not reduced, a new wave of emigration from the peripheries of Europe, into the center, is inevitable sooner or later. And at that point, both Poland and Germany will cease to be national units in their present sense, but become merely geographic boundaries with wholly floating populations–as is the case today for American states–except lacking the easy political integration that mobile Americans enjoy.

C-F-G also found that in general European countries with less inequality enjoy less unemployment. This suggests that for a substantial part of the employable population, national frontiers remain the relevant ones. An interesting test of this view came with German reunification. Both parts of Germany were highly egalitarian internally before 1989, and neither suffered especially high unemployment by European standards. They were, however, rigidly separated from each other. The difference between average levels East and West is so large, that unification created, almost instantaneously, a much more unequal country than existed in either part before. The model predicts that the equilibrium unemployment rate would rise on this account alone. And, sadly, so it did.

Galbraith and Garcilazo (G-G, 2004) extended this work by introducing new measures of inequality across European provinces–159 provinces annually for 15 years–showing the degree of inequality within provinces and the degree to which each province contributed to inequality in Europe as a whole. Their findings are consistent with C-F-G and with the theory just spelled out. Regions with lower inequality enjoy systematically less unemployment across Europe, and regions with higher average incomes also enjoy systematically less unemployment. G-G also show that, on balance, institutional difference between the major countries of continental Europe (excepting Spain before the recent decline in unemployment there, and to a very modest extent the UK and Netherlands) are not major predictors of differences in average unemployment rates. These findings are all inconsistent with the national-labor-market-rigidities framework that has, up until now, dominated the debate over unemployment in Europe.

In sum, both national and provincial measures of inequality support an augmented version of the Harris-Todaro view, that unemployment depends on the expected value of the gain from accepting a ticket to search for higher wages. It is equally consistent with the C-F-G view of social democratic anti-unemployment policy, which is that the wealthy countries avoid unemployment most effectively, not by liberalizing their labor markets, but by subsidizing low-productivity workers to stay in their jobs. As C-F-G argued, the efficiency gains from this strategy can be astonishingly large, propelling an egalitarian country with mediocre productivity such as Denmark into the forefront of the world competition for a high standard of living.

3. The Case of the United States.

In the opening section of this paper, we wrote of a widespread European belief:

The American Model stands as the template for the degree of inequality that must be achieved, in order to enjoy American full employment.

This sentence, we endorse. We think it is correct. It furnishes a precise and agreed-on point of departure for the empirical inquiry that follows. In our judgment, the forces that determine employment must operate on similar principles everywhere. Among these, in a given state of technology, must be a particular relationship between pay inequality and unemployment. We see no compelling reason why this relationship should differ between the U.S. and Europe.
It follows that there likely does exist an "optimal" structure of pay inequality, associated with maximum employment. Since the American employment experience is plainly better– a point no one disputes--it follows that would be good policy for Europe to seek levels of pay inequality characteristic of those found presently in the United States. *We shall turn in due course to the surprising implications of this statement.*

But first, what is the relationship of inequality to unemployment in the United States? Ample evidence suggests that it is the opposite of the prediction of the rigidities framework. In periods of high unemployment, American inequality in pay structures *increased.* In periods of full employment pay inequality *declined*. A consistent measure of manufacturing pay inequalities on a monthly basis back to 1947 tracks the monthly record of unemployment so closely that the two series would appear to be drawn from the same statistical distribution. Whatever else one may say about this, it is *not* consistent with a wage-adjusting view of vicissitudes of unemployment.

Figure 1 illustrates this finding. The measure of pay inequality is the between-groups component of Theil's T statistic computed across seventeen industrial categories in the United States for which consistent monthly data are available from January 1947 onward.[4] The variable observed is average weekly earnings in the category. The association with the monthly unemployment rate for the country is far too close to be coincidental.

The evidence of a *positive* relationship between pay inequalities and unemployment is bad news for the neo-Keynesian effort to claim a role for labor market flexibilization as an auxiliary to increasing demand. A hallmark of the neo-Keynesian effort is a strict separation between questions of distribution–which are reserved to micro–and questions of total effective demand. Only the latter remain within the macro-economist's province. An increase in labor flexibility and wage inequality (in the face of "skill-biased technological change") is, to this point of view, a micro measure that should improve employment prospects. Accordingly there should be evidence that increasing inequalities lead to higher employment. But there isn't. The finding that full employment is systematically egalitarian in distributive effect controverts the thesis.

By now readers will be objecting, on the common-sense ground that "everyone knows" that overall American society is grotesquely unequal, while Europeans retain values of solidarity which impart rigidities to their wages. So how can this argument possibly reconcile low unemployment in the United States with high unemployment rates in Europe?

Part of the answer is that the relevant inequalities are of *wages*: the reward for work. They do not include inequalities of other forms of income, including income from property and capital. In the American case, measurement is contaminated by a very wide range of highly unequal non-

[4]Similar though less distinct patterns can be found in broader measures of pay encompassing the services sector, but computational difficulties are greater.

wage incomes. Moreover, those inequalities grew dramatically in the late 1990s in particular, in function of the speculative bubble at that time. Capital gains were intensely concentrated by industry and location. As Galbraith and Hale (2004) show, the between-counties component of the surge in *income* inequality in the late 1990s was accounted for *entirely* by increasing income in just five counties: New York, NY, King County Washington (which is Seattle) and three counties in northern California: Santa Clara, San Francisco, and San Mateo. The United States has 3150 counties overall.

Schmitt and Zipperer (2006) report that, according to the Luxembourg Income Studies, pre-tax, pre-transfer income inequality in the United States in 2000 was not higher than in typical European countries. The U.S. value was around .45, while the range for Europe was between .39 and .50. It is only after one takes account of taxes and transfers that the United States rises to the top of the inequality tables, in measures of post-tax, post-transfer income. But it is the pre-tax, pre-transfer measure that reflects pay.

Pay inequalities, finally, can be measured directly, and they are what is relevant to a theory of labor-market adjustment. Comparable measures of industrial pay inequality for Europe and the United States can be drawn from the OECD's Structural Analysis data set, and the relevant calculations were made by C-F-G. They show that inequalities in industrial pay measured across sectors in the United States are comparable to the upper end of the national European range. They are not materially higher than in, say, Spain or Italy. And when one takes account of the large differentials between European country averages, inter-sectoral industrial pay inequalities are actually larger in Europe than in the United States.[5]

Figure 2, taken from C-F-G, shows inequality in manufacturing pay, measured across sectors within and between European countries, and compared to the United States. It shows that while the within-countries component of pay inequality in Europe is comparable to that in the United States, adding in the between-countries component radically worsens the European position in the comparison. It is not obvious–looking only at manufacturing pay– that the United States is the more inegalitarian region.

In this paper, we present an even more direct and updated comparison of between-regions pay inequalities, using measures of total payroll and total employment for 215 European regions and 51 American states, including the District of Columbia. The measures are made comparable by presenting them in the form of Gini coefficients, calculated on the artificial assumption that every person within a state or region enjoys the same average income. This is not intended to be, and is not, a full comparison of inequalities within the United States or across Europe. However, for a theory of unemployment, inter-regional inequalities are particularly important. They

[5] Hourly pay inequalities *within* industries in the U.S. may be larger, a fact that would blunt the inter-sectoral comparison. But apart from the well-known abuses of CEO pay in the United States it is not obvious that this is the case. Our experience with these comparisons is generally that the same order of difference prevails within and between industries. Another reason why U.S. unemployment fell so far below European levels may lie in superior search mechanisms in the language-unified and computerized U.S.. It may be easier for low-wage services workers in America to search for better jobs without actually leaving their current ones than in Europe. To the extent that this is true, the U.S. service sector may be sheltering many *underemployed* people who would be openly unemployed in Europe. However, we do not, have estimates of this, and it is also not obvious that underemployment is worse than unemployment.

measure, quite directly, the incentive for long-distance economic migration and therefore the incentive to expose oneself to the risk of unemployment in order to gain the possibility of a high-income job. By comparison, inequalities within close geographic quarters may represent nothing more than the incentive to commute, say by train between the Paris suburbs and downtown, or from the Bronx to Manhattan by subway.

When this comparison is undertaken, the results are quite striking. A European cross-regions Gini coefficient comes in at about .235, or more than twice the value of .101 computed across the 51 American states. To check the comparison, we reduced the number of regions involved in the European calculation to American values, by computing a Gini separately across every fourth region, and computed the average of the coefficients for the four such cohorts. This coefficient is essentially identical to the previous one. Other ways of aggregating European regions to achieve comparable values for Europe and the United States can be imagined, but we believe they would not alter the basic conclusion. Across continental distances, modern European incomes are dramatically more unequal, in average values, than are those in the United States.[6]

It does not necessarily follow from this that *living standards* in Europe are more unequal than in the U.S.. Indeed, we think living standards in Europe are generally more equal than in the U.S. Cost-of-living indexes tend to be geographically specific. The U.S. has large income differentials among populations living close to each other (e.g., blacks and whites in major cities) but exposed to roughly comparable living costs. In Europe, the differentials are much greater between regions and countries, with the East and the South experiencing much lower incomes, but also lower living costs, than the North and West. For this reason, the lived experience of a given nominal inequality may be harsher in the U.S. than in Europe, accounting for the common perception that life in America is less fair.

For the purposes of a theory of unemployment, however, it is nominal earnings differences that matter, and not real living standards. For a person contemplating long-distance migration, a key consideration is whether the nominal income available in a rich country can provide a decent living standard, not in the rich country, but in the poorer region whence the migrant comes, and where his family is likely to remain. Migrants are willing, typically, to endure cramped and deprived conditions in their place of work, precisely in order to maximize the incomes sent back to their home areas, where the purchasing power is magnified by a low living cost. Hence it is nominal inequalities–between Andalucia and Madrid, between the Algarve and Paris, between Poland and Frankfurt–that drive both the competition for low-skilled jobs in the rich regions and, to a very substantial extent, the unemployment rates they experience.

Furthermore, one can reasonably expect that cost-of-living differentials across Europe will decline over time. As markets continue to integrate, the traded-goods components of living costs will tend to equalize, leaving only the non-traded goods components, whose price levels depend on local wage levels (this includes rents) and the intangible elements of the living standard, as separating costs of living in richer and poorer regions of Europe. Absent convergence of nominal wages, convergence of living costs will produce further divergence of real living standards. Convergence policy must, therefore, deal with nominal differentials, as expressed in the common currency unit. It is, above all, a matter of money, and particularly of the money wage.

[6] For the EU-15 alone, the inter-regional Gini coefficient comes to .142, still 40 percent higher than in the U.S.

III. **The Mechanics of Convergence**

In this section we present the results of a calculation of relative growth rates of wage incomes, required to achieve a degree of convergence across the European regions. Our objective, arbitrarily chosen, is to reduce the degree of inter-regional inequality across Europe to American levels by 2042, the fiftieth anniversary of the Maastricht Treaty. The point of the exercise is to illustrate, under certain assumptions, what the relative annual growth rates of wages in each European region would have to be, in order to meet that objective.

For the exercise, we use data for 215 European regions, taken from Eurostat's REGIO dataset. Average wages for each region are computed from information given on wages within each of 16 economic sectors, in each region; the sectors are listed in Table A1. As our base year we choose 2000, the latest for which data for all 16 industrial sectors are available at the NUTS 2 regional level, except in Germany where regional data are only available at NUTS 1 for 8 industrial sectors.[7] We make the following assumptions, and impose the following restrictions.

First, we assume that the present hierarchy of relative incomes between every sector of every region in Europe will remain strictly unchanged. There are 3062 such "region-sector cells." We assume that the richest will remain the richest, the poorest will remain the poorest, and that all will retain the exact position in the ranking of average incomes that they presently have. Our purpose is not to overthrow any hierarchy, but merely to reduce the differentials between them.

Second, we assume that present gaps between region-sector cells will remain exactly proportionate to what they presently are. Our method is to reduce, each year, the proportionate gap between each cell and the one below it by exactly the same (very small) differential. We then calculate the compound growth rate required to advance each cell by exactly that amount.

Third, we assume that the richest region-sector cells (they consist largely of mining and utility workers in Germany) enjoy zero real wage growth between now and 2042. This is an artificial assumption, which can be relaxed by allowing these workers any given base rate of wage increase one may desire and that the productivity of the whole economy can afford. Setting a zero base for the best-paid sectors merely enables us to see most clearly what the relative growth rates in the poorer regions must be, in order to achieve a given degree of convergence.

Fourth, we assume no structural change in the balance of employment in any region between now and 2042. This is, again, purely artificial; in Section IV we shall suggest policies that violate the assumption, fostering an increasing share of better paid employments. But the assumption is necessary, at this stage, to keep calculations tractable and their meaning clear. Having calculated a path for wages in each region-sector cell, for each year from 2007 through 2042, we then add up the sectors within regions, to obtain new values for average pay in each

[7] To test the impact of the missing data for Germany, we estimated the missing observations by assuming that the wages and employment of missing sectors in German regions bear the same relationship to those in the covered sectors as in France. The simulations did not change significantly, and so we here report calculations that do not include this adjustment.

region. Average pay is obtained by taking the ratio of total 'compensation of employees'--including wages and salaries, plus employers' social contributions—and total employment for the region, assuming a fixed sectoral composition of employment; thus we compute a pre-tax, pre-transfer measure of average pay, measured in thousands of euro per year.

From this value, we can compute the Gini coefficient of pay inequality across regions in 2042. We set this value to the desired level, corresponding to the American value in 2000, and adjust the convergence parameter, which governs the pace at which the earning structure is compressed, until we achieve the desire degree of inequality on the target date. \

The results are given in detail in the appendix (Table A2) and here in a map (Figure 3). The table gives the annual compound growth rate of average wages for each region, required to achieve an American degree of regional earnings convergence by 2042. The map shows the broad outlines of the strategy in geographic terms. If it were desired to give those sectors presently at the top of the European pay ladder additional gains, then meeting the convergence targets would require comparable acceleration of wage gains further down.

Would the wage gains in the poorer regions of Europe associated with convergence be inflationary? They would clearly have the effect of raising the prices of non-traded goods in these presently low-cost regions, and the associated land rents. However, following the Rehn-Meidner formula, they would also raise productivity in those regions, and there is no reason to expect that costs would rise more than productivity would. In the U.S. experience in the late 1990s, productivity rose *pari passu* with employment, as firms facing labor shortages sought and discovered new ways to improve their use of labor. There was no employment-driven inflation. For Europe, we calculate that the average rate of wage gain between 2006 and 2042 implied by our convergence parameters is about 3.5 percent. This is only slightly above historically-achieved rates of productivity growth at high employment, and perfectly achievable when the increases are concentrated in low-income regions with productivity catch-up potential.

Since convergence *per se* has no effect on the prices of traded goods produced in the high-wage, high-productivity regions, there is no reason to expect that it would affect traded-goods prices and therefore the conventional measures of price inflation in traded goods. Nor should convergence induce any wage-wage spirals among the workers of the richer countries, so long as the purposes of the policy were well-understood, agreed upon, and respected in practice. Convergence is not designed to catapult Spain (say) ahead of France: its purpose is only to reduce the present gap between them.

What convergence would do is raise effective demand emanating from the presently low-wage regions. It would raise the demand of those regions for traded-goods produced elsewhere in Europe, and therefore help to absorb unemployed labor in the traded-goods producing centers. And it would raise the demand for (white-market) services employment in the converging countries, absorbing labor *in situ* at increasingly tolerable, and ultimately attractive, wages. This would reduce incentives to economic migration, and therefore reducing pressures on labor supply in the richer countries even as unemployment fell in the presently poorer regions.

The result, at the end of the day, would be a Europe approaching full employment, in harmony

and solidarity, without serious inflation. With confidence that policy can, in fact, succeed at this objective, opposition to broadening the scope of European integration and governance should accordingly melt away over time. *A convergence policy, we suggest, is the only way to achieve this goal.* It is therefore the only way to preserve the European ideal in the face of the present debilitating challenges of unemployment, immigration and social dislocation, attendant on the manifest failure of European economic policy so far. What remains, is to ask for concrete policies to achieve this general objective.

IV. **The Policies of Convergence.**

Hurricane Katrina and the destruction of New Orleans have exposed for Europeans the folly of the "American model" as commonly understood. Having abandoned planned public capital investment–not merely under George Bush but over thirty years–the United States finds itself unprotected from a well-predicted natural disaster, unable to stage an effective urban evacuation, and with impaired capacity to plan and execute reconstruction. Meanwhile fiscal federalism in the stricken region leads to public sector bankruptcy and a collapse of services, to the point where local authorities could not even detain, let alone prosecute, thieves, murderers and rapists. Even a year later, some evacuees find themselves still stranded in hotels and shelters across the country, their homes ruined, their finances in tatters and their futures in doubt.

To the extent that the drive for labor market reform in Europe is predicated on shallow comparison with the United States, these developments should signal a profound re-examination of assumptions. Do free and flexible labor markets imply, in part, the abandonment of cherished national and regional construction projects? Given the obvious linkage between wage rates and tax revenues, clearly they do: impoverished workers cannot easily support expensive public works. But public works are integral to the identity, and even to the survival of Europe. Should the game of labor market reform require privatizing the SNCF or defunding the Dutch levees, few Europeans would consider it worth the candle.

Nevertheless, Europeans would be mistaken to swing to the view that America's experience has nothing to offer in the way of useful ideas against mass unemployment. For it was only five years ago that the United States did achieve full employment–with a high labor force participation rate, measured unemployment rates below four percent for three years in a row, and unemployment and poverty among ethnic minorities at record lows. America did achieve this, and with negligible price inflation. The question to ask is, how?

The answer *cannot* be found in the hypothesis of "labor market flexibility." This hypothesis holds that wages adjusted to equate marginal productivity to pay. It implies that in the run-up to full employment, the United States should have experienced increasing inequality in the structure of earnings, or pay. Yet this was not the case. Although *income* inequality rose, that was due (practically speaking, *entirely*) to the rise in *capital* incomes – to the cash-flow immanent in the technology boom. As we have seen, p*ay* inequalities--relevant to the labor market--*declined*.

The same principle holds across Europe in cross-section: to summarize Galbraith and Garcilazo again, regions with lower inequality in their pay structures exhibit systematically lower rates of unemployment. More broadly, much of the variation of European unemployment can be

accounted for by inequalities within and between regions, by differential growth rates and by the share of youth in total population. Much of the remainder is due to variations common to all European regions, *prima facie* evidence of the importance of continental macroeconomic control. In more recent work, G-G (2005) show that as unemployment declined across Europe in the late 1990s, inequality also declined.

The implications for the general design of unemployment policy are straightforward. Anything that will *reduce* the inequality of European wages will help reduce chronic unemployment. So will targeted measures that provide *pre-labor* market opportunities for young people, enabling them to time their entry into paid employment so as to escape being tarred as long-term unemployed. So would anything that increases rates of growth in a targeted way.

But, what specific policies will do the work that must be done? One must be careful. Would, for example, raising the minimum wage in Germany to a higher fraction of the average be an effective way to reduce inequalities (and therefore unemployment) in Europe? It would not. For the inter-sectoral differences within the labor markets of the German Lande are not among the most significant in Europe. In fact, they are already among Europe's lowest inequalities.

Pay inequality in Europe today is of a different kind. Within individual European regions, it is highest where middle class jobs--usually associated with manufacturing industry and robust service employment at good wage rates--are scarce or absent. It is in Europe's dualistic economies, with a handful of good jobs and many undesirable ones, where structural unemployment festers. These exist mainly on the European periphery, and very extensively among the accession countries. An even larger source of overall inequality in Europe is *between* these regions and the rich regions of the European center. Raising minimum wages in Germany does nothing to create middle-class jobs in the periphery, and nothing to relieve the difference separating average wage levels in Germany from those of Poland or Spain.

It follows that an **egalitarian growth policy–***with directed measures to raise relative growth rates in the poorer regions of Europe*–would be the single most powerful medium-term measure for the reduction of European unemployment. Some instruments for this already exist. **Regional funds** are a proven, powerful tool especially for the smaller countries. They could and should be expanded. But they are limited by the capacity of direct state action. They are also strongly biased toward infrastructure improvements (paying high wages), and therefore limited in their effect on employment. They are not by themselves sufficient; new instruments are required.

The practical steps that would generate convergence within Europe involve the incomes *of persons*. The European Union has left social welfare policies to member states; the inequalities in their economic positions are perpetuated by this decision. This is the problem that policy innovation must now begin to address. *Interregional personal income convergence* is a key to less inequality and fuller employment in Europe. The efficient way to achieve this is directly: by contriving to raise the incomes of Europe's poor– measured on the continental scale and largely consisting of the residents of low-income regions–more rapidly than the incomes of the rich.

This is an old story in the United States. In this country, the deep South, the old Confederacy, was along with Appalachia until recent times much poorer than any other region and marked by

much deeper unemployment. Periodic crises, such as the Dust Bowl of the 1930s, sparked mass migration--of the Okies and Arkies to California, of the blacks from Mississippi and Alabama to Chicago and Detroit. This eventually spurred a project of national economic convergence.

And so in the 1930s the United States began the process of federalizing the welfare state. Social Security and a continental minimum wage came already in the 1930s. A national industrial development policy grew out of deliberate federal investment decisions in the wartime mobilization of the 1940s. A national transportation network was built in the 1950s. In the 1960s we achieved federally-funded health care for the elderly and the poor (Medicare and Medicaid). Even Richard Nixon's administration contributed General Revenue Sharing–though this program alone did not survive the Reagan counter-revolution of the 1980s, and no further progress has been made since that time. Nevertheless, today the *continental integration* of social welfare policy in the United States is much farther along than in Europe (and the Deep South and Appalachia are no longer especially poor). It is this, and not flexible labor markets, that accounts for America's relative success against entrenched *structural* unemployment.

As economic integration now encompasses all of Europe, the European Union needs to follow that earlier American example. More social democracy, and a *more unified* social democracy, is the answer to European unemployment. It remains to identify specific measures, and to prove out the model with bold experiments.

One useful, practical step, fully consonant with economic justice, would be the creation of a **European Pension Union**, to move toward convergence in the base incomes of the elderly. There is no just reason, in a unified Europe, why the retired elderly of the poor countries should be paid on the income standard of their own nation, and suffer the indignity of poverty in old age compared to fellow Europeans who worked no harder, and no longer, than themselves. Minimum pensions should be set on a standard governed by the average productivity of Europe as a whole, and the differentials paid directly to individuals by direct transfer through the European Union.

In a similar vein, there is no just reason why unskilled pay differentials across Europe should be allowed to remain as large as they are. The street sweepers and news vendors of Portugal are not less productive than those of Germany (except by virtue of inferior capital equipment) . The European Union could inaugurate a "topping up" scheme for low wage employees in the poor regions, along the lines of the American **Earned Income Tax Credit**. This too would slow economic dislocation and reduce the incentive to migration, directly raising pay and purchasing power in the non-traded goods sectors of peripheral Europe.

Next there is a role for a **continental minimum wage,** which would prevent employers from abusing the "topping up" plan by driving down their pay offers. In the U.S. a federal minimum was first introduced in 1935; presently at $5.15 per hour it affects almost no-one. In Europe, the starting value would have to be very low, befitting conditions in the low-wage periphery, but with scheduled increases in accord with the convergence program. The impact would not be felt in higher-wage regions until overall differentials had narrowed; meanwhile (as in the U.S.) each country could elect a higher minimum if it chose to do so.
No one would wish Europe to emulate American rates of military enlistment or incarceration. But U.S. rates of enrollment in higher education – now up to about half of high school graduates

(and higher in some places, such as California) are another matter. The investment required to bring improve European performance in this area would mobilize resources in the lower-income areas, while sharply reducing the incidence of youth joblessness by converting the unemployed, as the U.S. does, *into students*. **Let Europe, therefore, fund and build *European* universities, throughout the European periphery, on a scale and of a quality to rival higher education in the United States.** Here regional development and human development converge.

The economic burden of these and similar measures needs to be understood carefully. It need not be, as many suppose, a matter of taxing Germans to support Portuguese. Rather, as there exist unemployed human capital assets in Portugal, the appropriate step is to create a liability that will permit their employment. A pension supplement scheme, placing purchasing power in the hands of the elderly in Portugal, will mobilize latent resources in Portugal. It has no other important economic effects. In fact, there is no need to tax the Germans to do it. A euro deficit run at the European level is perfectly justifiable, so long as overall unemployment exists at intolerable levels. The interest on that deficit can be paid, in effect, from the eventual increase in national income in Portugal. The burden will be light if the benefit is realized.

Beyond these examples of effective redistributive policy (which could be multiplied, particularly by emulating the role of the nonprofit sector in U.S. job creation), there is a need to address the larger problem of relative growth rates. This is substantially a macroeconomic problem, and accordingly there needs to be a new and plainly Keynesian understanding of what it might take to achieve aggregate income convergence.

The readily-available macroeconomic policy instruments in Europe are now reduced to a single measure: a lower interest rate. But there is no way to impose low interest rate policy on the European Central Bank, no very practical way to target the policy to the European periphery, and no guarantee that lower interest rates–if they worked at all–would in fact foment income convergence. If monetary stimulus were to help the rich countries of Europe more than the poor, producing a bubble, rising inequalities could rise.

The active role of monetary policy in a convergence strategy is therefore somewhat limited. Indeed, it would be all too easy to reverse convergence at any time, by raising interest rates and so transferring income from debtors to creditors, from the relatively poor to the relatively rich. This must be prevented. Rather than relying on central bank policy to lead the process, a major objective of the strategy must be, simply, to limit the degree to which the ECB can undermine it.

And yet, the monetary front is not entirely barren. The euro worked–so far– for much of the periphery of Europe. The remarkable decline in unemployment in Spain (from over 20 to around 8 percent) clearly owes much to the disappearance of exchange rate risk and to the resulting interest rate convergence. In principle, this reduces distortion in favor of manufacturing activity in peripheral countries and absorbs the unemployed into better-paid services jobs, which now become credit-worthy in ways they were not before. In the U.S. in the late 1990s, millions of new services and housing jobs were created–not by lowering wages, nor by deficit spending, but simply by making credit available for next to nothing.
Overall, however, monetary policy cannot be relied on. The new countries to the East are so far not enjoying the credit and service-employment expansion that has occurred in Spain, and there

is no good reason to think that the Spanish credit expansion will be repeated there in the near time. More direct policies are needed, to get the convergence process underway.
And so we turn to fiscal policy proper. An effective targeted, growth-producing fiscal policy is required. This means running deficits, but in such a way as to benefit the larger goals.

How might the Stability and Growth Pact be revised to achieve this? One way would be to let the Union itself be permitted to run fiscal deficits, and to issue Euro bonds, supporting a the incomes of the lower-income persons and regions, and so a strategy of convergence. This is what America usually does, or tries to do, in practice, in a slump. However such a radical change presupposes a development of European federalism and European Keynesianism on a scale that is not presently in the cards.

If the best policy--the most efficient route to fiscal expansion– is barred, the same effect could be sought in other ways. An alternative would be to **rewrite the Stability and Growth Pact to permit *any* country of the EU to run deficits greater than three percent–the current limit excepting only in deep recessions–so long as unemployment *on average* in Europe is higher than a threshold value**. The point here is that it does not matter *which* country in Europe runs deficits and provides stimulus. Since the European economies are integrated, the resource-using effects will be felt everywhere. And if the Germans, say, do not want to create full employment in Europe by absorbing first their own unemployed and then attracting immigrants from Spain or Poland? Well then, let the Spaniards or the Poles do it, and let Germans (directly or indirectly through the ECB) hold the resulting bonds. Could German money build a great university in Portugal or Greece, in Budapest or even Sofia? Of course it could.

The threshold average value for unemployment in this scheme need not be close to full employment. Any figure well below the present European averages–for instance, six percent--would do. For it is a near-certainty that once unemployment in Europe started decisively on a downward path, the private sector's demand for credit (and its perceived creditworthiness by financial institutions) would rise. Before long, the resulting growth of *private* deficits and debt would reduce the deficits of the public sector. The problem for the authorities would then be merely to manage the flow of funds, guarding against the emergence of bubbles and Ponzi schemes that would make the expansion difficult or impossible to sustain.

Such, in any event, was the experience of the United States in the late 1990s, when a credit expansion, underpinned by fiscal federalism and a long-term, structural policy of interregional convergence, brought us to full employment without inflation. It was a happy time, while it lasted. And it contains a plethora of useful, unexpected, and unexploited lessons for Europe. These are lessons moreover which Europe, which has not plunged itself into needless wars nor grossly neglected its public capital formation, is very well positioned to exploit. They are just not the lessons that most Europeans, casting a highly conditioned glance in the American direction, usually expect to find. And they will not find them, until they come to understand our actual circumstances, far better than the conventional economics has taught them how to do.

Technical Appendix.

1. Gini Coefficients for earnings, measured across regions in Europe, are computed by the following formula:

$$GINI = \frac{2}{N-1} * \sum_{i=1}^{N-1} \left(F_i - Q_i \right),$$

where:

- N is the number of regions
- $F_i = \frac{i}{N}$
- $Q_i = \frac{\sum_{j=1}^{i} \bar{y}_j}{\sum_{j=1}^{N} \bar{y}_j}$
- y(bar) j is the average earnings of region j

2. Economic sectors in the REGIO data set are given in Table A.1

TABLE A1. ECONOMIC SECTORS

Sectors by NACE (1995-2000)	
Agriculture, hunting and forestry	Transport, storage and communication
Fishing	Financial intermediation
Mining and quarrying	Real estate, renting and business activities
Manufacturing	Public administration and defence; compulsory ss**
Electricity, gas and water supply	Education
Construction	Health and social work
Wholesale and retail trade; repair of motor vehicles,*	Other community, social, personal service activities
Hotels and restaurants	Private households with employed persons

*Motorcycles and personal and household goods
** Social security

3. Calculating Convergence Paths

The convergence path for wages among 215 European regions over a 34-year period (2007-2042) is set so that the dispersion of average wages between European regions in 2042 becomes equal to the dispersion of average wages between the 51 US states (including the District of Columbia) in 2001.

Four key assumptions underpin these calculations:

I. The present hierarchy of relation incomes between every sector of every region in Europe remains strictly unchanged. The richest remain the richest and the poorest the poorest.
II. Every gap between region-sector cells in 2042 remains exactly proportional to its 2000 value.
III. The richest region-sector cell enjoys zero real wage growth between now and 2042.
IV. No structural change occurs in the balance of employment in any region.

The calculations followed this procedure:

1. Compute the Gini coefficient for inequality of average pay across 51 North American states in 2001 (0.101).
2. Compute average annual wages, in thousands of euro, among 16 industries for 215 European regions in 2000 and the associated Gini coefficient across the regions (.235).
3. Compute average wages for each region-sector cell in 2000 (a total of 3062) and rank them from high to low.
4. Take the ratio of the second highest to the highest region-sector cell, the third highest to the second highest, and so forth, down to the ratio of the lowest to the second lowest. There are a total of 3061 ratios.
5. Assume zero real wage growth in the richest region-sector cell between now and 2042.
6. Choose the required ratio (convergence parameter) so that the European inter-regional Gini coefficient in 2042 corresponds to the American value in 2000. The convergence parameter meeting this requirement is 0.999822, meaning that the gap between each region-sector cell and the one immediately below it is reduced by this ratio, each year.
7. Add sectors within regions, to obtain new values for the average wages in each region in 2042.
8. Compute the compound growth rate of average wages in each region required to meet the convergence criterion in 2042.

Table A.2 displays the results. For each European region, the table displays average wages in 2000 (step 2), the required level of average wages in 2042 (step 7) necessary to meet the convergence criteria (step 6), and the associated compound rate of wage growth, necessary to meet the convergence criteria under the stipulated conditions (step 8). Note that the present rank-order of regional average incomes is not preserved by this procedure; rather the present rank-order of all sectors within regions is preserved. But regions with a large fraction of sectors that are near but not quite at the top of the current rankings may see their average incomes overtake those of the presently highest-income regions; this is true for parts of Holland and especially for Inner London.

Table A.1 Convergence Paths for Each European Region.

Code	Region/ Province	Av Wage 2000	Av Wage 2042	Rate of Growth
De1	Baden-Württemberg	35.64	93.24	3%
De2	Bayern	33.89	92.30	3%
De3	Berlin	32.80	93.71	3%
De4	Brandenburg	25.97	86.54	3%
De5	Bremen	36.12	94.06	3%
De6	Hamburg	37.65	110.96	3%
De7	Hessen	35.61	94.21	3%
De8	Mecklenburg-Vorpommern	25.66	85.85	3%
De9	Niedersachsen	33.54	93.21	3%
Dea	Nordrhein-Westfalen	35.27	94.29	3%
Deb	Rheinland-Pfalz	33.36	91.33	3%
Dec	Saarland	33.55	92.50	3%
Ded	Sachsen	24.75	85.62	4%
Dee	Sachsen-Anhalt	25.41	86.05	3%
Def	Schleswig-Holstein	31.73	91.18	3%
Deg	Thüringen	24.51	84.35	3%
Gr11	Anatoliki Makedonia, Thraki	17.62	74.66	4%
Gr12	Kentriki Makedonia	17.53	74.64	4%
Gr13	Dytiki Makedonia	19.32	74.79	4%
Gr14	Thessalia	17.86	74.55	4%
Gr21	Ipeiros	18.49	74.92	4%
Gr22	Ionia Nisia	17.79	74.45	4%
Gr23	Dytiki Ellada	17.54	74.22	4%
Gr24	Sterea Ellada	17.55	74.51	4%
Gr25	Peloponnisos	17.85	74.52	4%
Gr3	Attiki	18.36	74.57	4%
Gr41	Voreio Aigaio	18.54	75.70	4%
Gr42	Notio Aigaio	17.85	74.73	4%
Gr43	Kriti	17.32	74.39	4%
Es11	Galicia	14.03	75.98	5%
Es12	Principado de Asturias	17.91	77.82	4%
Es13	Cantabria	18.52	77.51	4%
Es21	Pais Vasco	22.64	81.55	4%
Es22	Comunidad Foral de Navarra	21.87	79.63	4%
Es23	La Rioja	19.29	78.10	4%
Es24	Aragón	20.12	78.98	4%
Es3	Comunidad de Madrid	23.17	80.70	4%
Es41	Castilla y León	18.96	77.99	4%
Es42	Castilla-la Mancha	16.79	77.25	4%
Es43	Extremadura	15.66	76.31	4%
Es51	Cataluña	19.71	78.53	4%
Es52	Comunidad Valenciana	16.77	76.06	4%
Es53	Illes Balears	18.80	77.61	4%
Es61	Andalucia	16.18	76.93	4%
Es62	Murcia	14.91	75.33	5%
Es63		22.44	78.43	4%
Es7	Canarias (ES)	17.56	78.96	4%
Fr1	Île de France	43.69	117.61	3%
Fr21	Champagne-Ardenne	30.76	87.31	3%
Fr22	Picardie	30.01	85.10	3%

Fr23	Haute-Normandie	31.00	84.58	3%
Fr24	Centre	30.40	85.91	3%
Fr25	Basse-Normandie	27.73	83.11	3%
Fr26	Bourgogne	29.32	86.49	3%
Fr3	Nord - Pas-de-Calais	30.50	84.65	3%
Fr41	Lorraine	30.40	94.36	3%
Fr42	Alsace	33.54	96.61	3%
Fr43	Franche-Comté	29.30	85.70	3%
Fr51	Pays de la Loire	28.63	85.07	3%
Fr52	Bretagne	28.53	86.14	3%
Fr53	Poitou-Charentes	28.08	85.53	3%
Fr61	Aquitaine	28.95	92.25	3%
Fr62	Midi-Pyrénées	29.70	86.89	3%
Fr63	Limousin	28.28	84.32	3%
Fr71	Rhône-Alpes	32.27	86.52	3%
Fr72	Auvergne	29.13	85.91	3%
Fr81	Languedoc-Roussillon	27.97	84.36	3%
Fr82	Provence-Alpes-Côte d'Azur	31.60	87.64	3%
Fr83	Corse	31.36	87.94	3%
Ie01	Border, Midlands and Western	28.30	84.13	3%
Ie02	Southern and Eastern	30.79	87.88	3%
itc1	Piemonte	28.82	84.51	3%
itc2	Valle d'Aosta/Vallée d'Aoste	29.62	85.85	3%
itc3	Liguria	28.90	84.53	3%
itc4	Lombardia	30.12	86.95	3%
itd1	Prov. Autonoma Bolzano-Bozen			
itd2	Prov. Autonoma Trento			
itd3	Veneto	27.52	84.86	3%
itd4	Friuli-Venezia Giulia	28.28	84.57	3%
itd5	Emilia-Romagna	28.53	85.41	3%
It1	Toscana	27.15	84.54	3%
It2	Umbria	25.86	83.39	3%
It3	Marche	26.25	83.82	3%
It4	Lazio	29.48	86.15	3%
Itf1	Abruzzo	25.75	83.00	3%
Itf2	Molise	27.17	83.95	3%
Itf3	Campania	25.44	81.99	3%
Itf4	Puglia	23.56	81.39	4%
Itf5	Basilicata	25.78	83.17	3%
Itf6	Calabria	23.16	81.02	4%
itg1	Sicilia	25.50	82.65	3%
itg2	Sardegna	25.64	82.82	3%
Nl11	Groningen	36.17	100.81	3%
Nl12	Friesland	33.48	99.60	3%
Nl13	Drenthe	33.76	99.48	3%
Nl21	Overijssel	34.09	99.70	3%
Nl22	Gelderland	35.15	93.39	3%
Nl23	Flevoland	33.70	92.06	3%
Nl31	Utrecht	38.27	94.50	3%
Nl32	Noord-Holland	38.11	102.97	3%
Nl33	Zuid-Holland	37.41	102.40	3%
Nl34	Zeeland	35.37	100.46	3%
Nl41	Noord-Brabant	35.16	100.72	3%
Nl42	Limburg (NL)	35.13	93.54	3%

At11	Burgenland	27.32	86.59	3%
At12	Niederösterreich	30.71	103.10	3%
At13	Vienna	39.70	131.94	3%
At21	Kärnten	29.60	95.54	3%
At22	Steiermark	28.77	94.08	3%
At31	Oberösterreich	32.36	97.10	3%
At32	Salzburg	30.97	96.46	3%
At33	Tirol	28.70	93.94	3%
At34	Vorarlberg	31.41	96.35	3%
Pt11	Norte	9.43	69.29	6%
Pt16	Centro (PT)	9.18	69.00	6%
Pt17	Lisboa	13.27	70.73	5%
Pt18	Alentejo	9.40	69.53	6%
Pt15	Algarve	9.43	69.18	6%
Pt20	Região Autónoma dos Açores (PT)	9.09	69.23	6%
Pt30	Região Autónoma da Madeira (PT)	9.39	69.45	6%
Fi13	Itä-Suomi	23.17	79.51	3%
Fi14	Väli-Suomi	23.67	79.01	3%
Fi15	Pohjois-Suomi	25.38	80.85	3%
Fi16	Uusimaa (suuralue)	31.05	86.57	3%
Fi17	Etelä-Suomi	26.12	80.62	3%
Fi2	Åland	29.94	84.16	3%
Se01	Stockholm	42.12	102.78	3%
Se02	Östra Mellansverige	34.31	91.11	3%
Se04	Sydsverige	34.94	90.64	3%
Se06	Norra Mellansverige	33.05	90.64	3%
Se07	Mellersta Norrland	32.61	97.77	3%
Se08	Övre Norrland	32.77	90.43	3%
Se09	Småland med öarna	32.60	97.70	3%
Se0a	Västsverige	34.57	96.93	3%
Be10	Région de Bruxelles	44.25	110.93	3%
Be21	Prov. Antwerpen	39.04	106.12	3%
Be22	Prov. Limburg (B)	33.50	101.81	3%
Be23	Prov. Oost-Vlaanderen	35.11	103.90	3%
Be24	Prov. Vlaams Brabant	40.58	107.68	3%
Be25	Prov. West-Vlaanderen	32.74	103.17	3%
Be31	Prov. Brabant Wallon	40.07	117.22	3%
Be32	Prov. Hainaut	33.87	94.59	3%
Be33	Prov. Liège	34.07	102.82	3%
Be34	Prov. Luxembourg (B)	31.26	93.17	3%
Be35	Prov. Namur	33.03	102.74	3%
ukc1	Tees Valley and Durham	30.94	105.14	3%
ukc2	Northumberland, Tyne and Wear	30.11	96.63	3%
ukd1	Cumbria	28.36	100.08	4%
ukd2	Cheshire	32.85	106.14	3%
ukd3	Greater Manchester	31.81	95.90	3%
ukd4	Lancashire	30.90	95.17	3%
ukd5	Merseyside	30.63	87.40	3%
uke1	East Riding and North Lincolnshire	31.46	94.96	3%
uke2	North Yorkshire	29.31	95.76	3%
uke3	South Yorkshire	30.18	94.91	3%
uke4	West Yorkshire	31.41	96.13	3%
ukf1	Derbyshire and Nottinghamshire	32.97	108.11	3%
ukf2	Leicestershire, Rutland and Northants	33.47	97.12	3%

ukf3	Lincolnshire	28.17	102.59	4%
ukg1	Herefordshire, Worcestershire and Warks	29.40	94.27	3%
ukg2	Shropshire and Staffordshire	28.31	93.06	3%
ukg3	West Midlands	32.40	105.13	3%
ukh1	East Anglia	29.66	103.37	4%
ukh2	Bedfordshire, Hertfordshire	34.72	110.06	3%
ukh3	Essex	30.13	90.41	3%
uki1	Inner London	48.10	195.81	4%
uki2	Outer London	37.34	129.69	4%
ukj1	Berkshire, Bucks and Oxfordshire	36.94	123.14	3%
ukj2	Surrey, East and West Sussex	31.56	108.09	3%
ukj3	Hampshire and Isle of Wight	30.71	103.61	3%
ukj4	Kent	31.52	131.51	4%
ukk1	Gloucestershire, Wiltshire and North Somerset	31.56	105.50	3%
ukk2	Dorset and Somerset	28.57	103.64	4%
ukk3	Cornwall and Isles of Scilly	23.56	81.72	4%
ukk4	Devon	28.45	111.27	4%
ukl1	West Wales and The Valleys	29.92	104.37	4%
ukl2	East Wales	32.03	116.48	4%
ukm1	North Eastern Scotland	34.61	106.07	3%
ukm2	Eastern Scotland	31.92	97.67	3%
ukm3	South Western Scotland	31.20	96.42	3%
ukm4	Highlands and Islands	25.59	100.08	4%
ukn0	Northern Ireland	28.42	104.05	4%
Cz01	Praha	10.42	67.42	5%
Cz02	Strední Cechy	6.47	64.66	7%
Cz03	Jihozápad	6.09	65.32	7%
Cz04	Severozápad	5.85	64.50	7%
Cz05	Severovýchod	5.89	64.65	7%
Cz06	Jihovýchod	5.93	64.55	7%
Cz07	Strední Morava	5.70	64.22	7%
Cz08	Moravskoslezko	6.18	64.55	7%
hu1	Közép-Magyarország	9.29	66.88	6%
hu21	Közép-Dunántúl	6.38	64.55	7%
hu22	Nyugat-Dunántúl	6.09	64.23	7%
hu23	Dél-Dunántúl	5.53	64.25	7%
hu31	Észak-Magyarország	5.71	64.11	7%
hu32	Észak-Alföld	5.30	64.28	7%
hu33	Dél-Alföld	5.26	63.83	7%
Pl11	Lódzkie	7.24	67.48	6%
Pl12	Mazowieckie	10.18	68.84	5%
Pl21	Malopolskie	7.51	67.24	6%
Pl22	Slaskie	8.25	66.70	6%
Pl31	Lubelskie	7.35	67.06	6%
Pl32	Podkarpackie	7.27	66.38	6%
Pl33	Swietokrzyskie	7.37	66.40	6%
Pl34	Podlaskie	7.40	66.34	6%
Pl41	Wielkopolskie	7.54	66.79	6%
Pl42	Zachodniopomorskie	7.05	65.86	6%
Pl43	Lubuskie	7.14	67.08	6%
Pl51	Dolnoslaskie	7.84	66.76	6%
Pl52	Opolskie	7.66	66.76	6%
Pl61	Kujawsko-Pomorskie	7.22	65.92	6%

Pl62	Warminsko-Mazurskie	7.21	66.38	6%
Pl63	Pomorskie	7.74	66.63	6%
Sk01	Bratislavský	7.74	66.18	6%
Sk02	Západné Slovensko	5.10	64.04	7%
Sk03	Stredné Slovensko	5.14	64.77	7%
Sk04	Východné Slovensko	4.98	64.12	7%

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Figure 1.

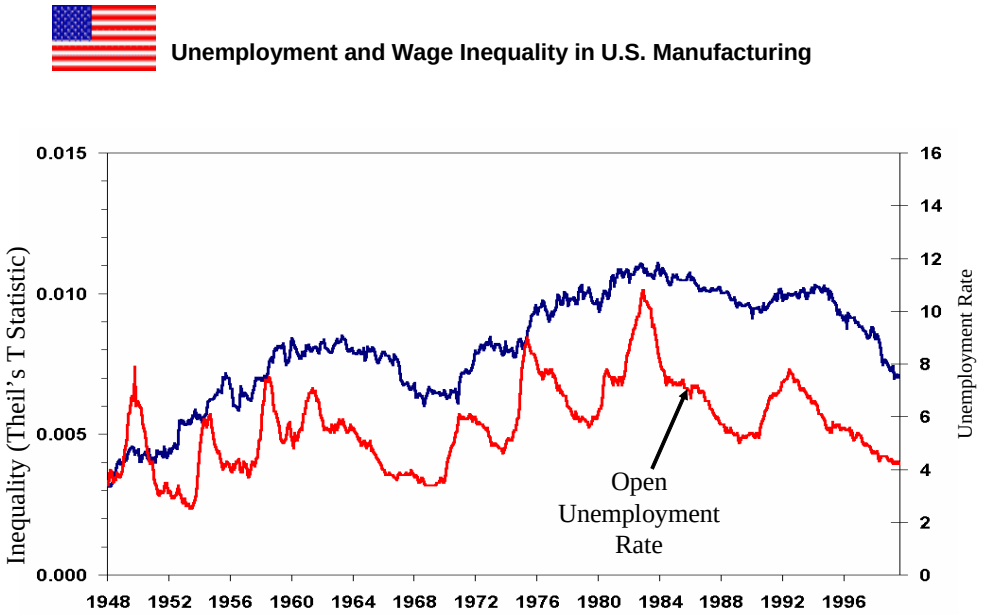
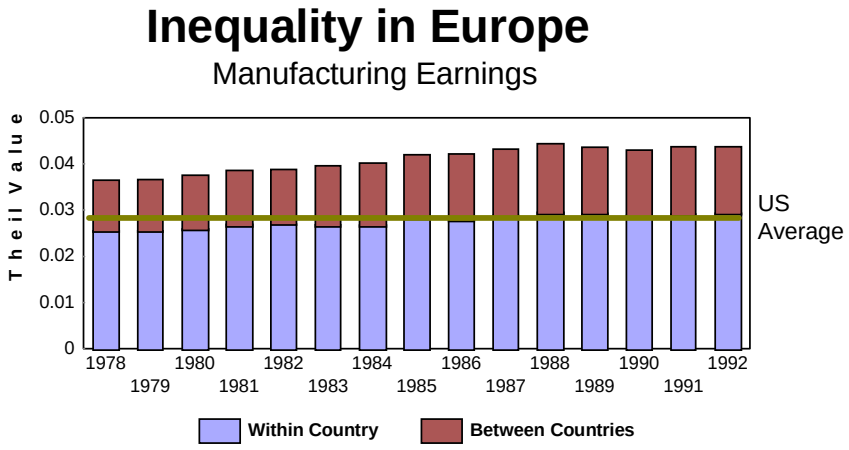
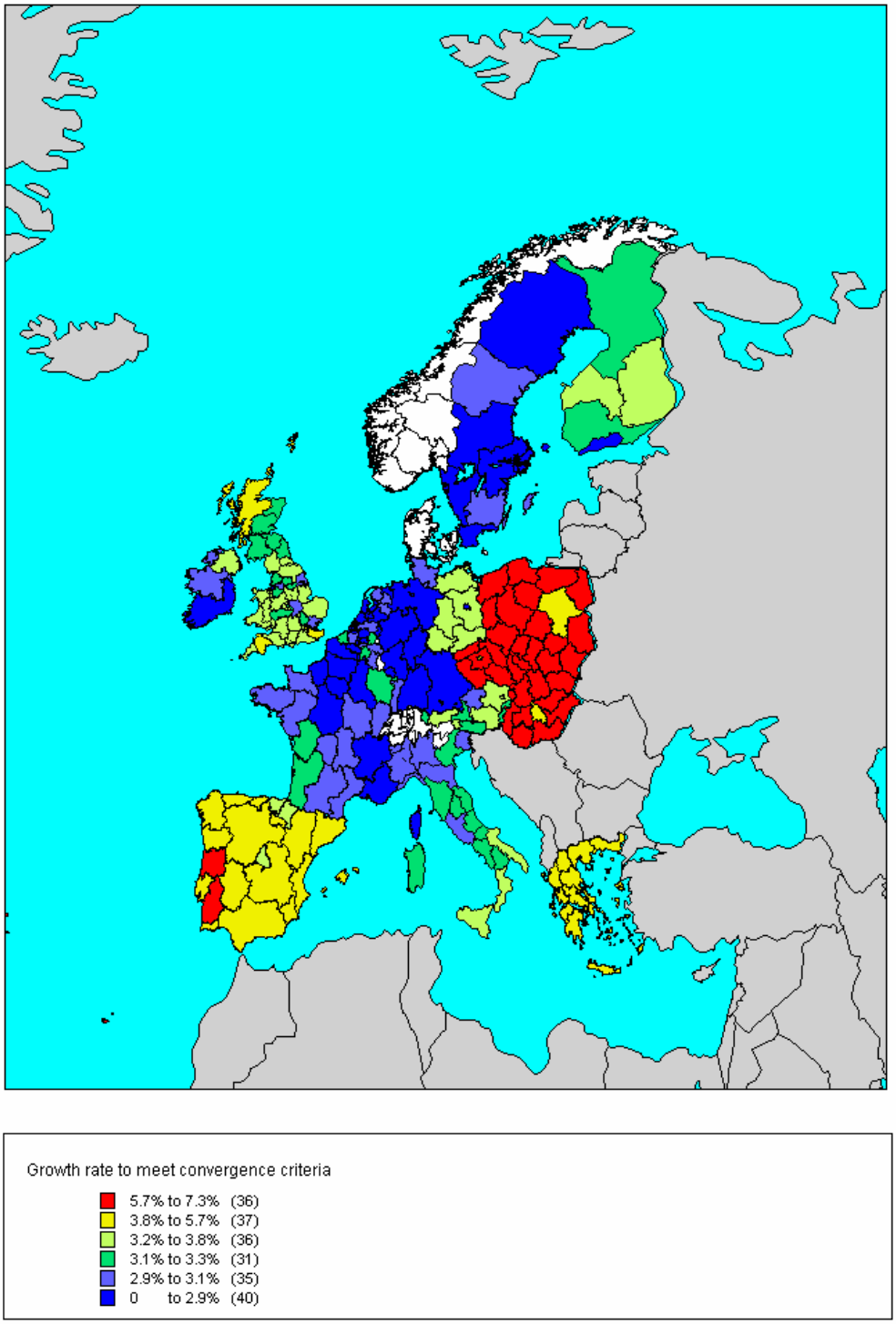


Figure 2.



Source data: OECD STAN Data Base.

Figure 3. Distribution of growth rates of real average annual pay by regions, required to meet convergence criteria between 2007 and 2042.



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