Unemployment Crisis – Challenge and Opportunity

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The recent financial crisis has caused increased unemployment throughout the world. We focus on the implications for future labor market performance and on a reform proposal for Europe. The consequences of the present crisis for Europe depend on whether today's higher unemployment reflects a temporary elevation that will recede with the crisis, or if it will cause an increase in structural unemployment that will persist beyond the recovery of the world economy. To analyze this question one needs a theory that can also explain the evolution of European unemployment prior to the present crisis. In particular, the European employment experience during the last 60 years can be divided into a period with low unemployment in the 1950s until the mid-1970s and thereafter a large increase with persistently high unemployment since the 1980s.

We discuss two theories of the European employment experience, which have different predictions for what the unemployment consequences will be of the crisis and hence, imply different policy recommendations. One theory that has recently gained much attention is the analysis of Nobel Laureate Prescott (2004 and 2005) who attributes low European employment to higher labor taxes in Europe as compared to that of the United States. After explaining the mechanics of that macroeconomic analysis (which are not so well-known outside of the academic profession) and a microeconomic critique of it, we conclude that Prescott's theory has the sanguine implication of unemployment returning to its pre-crisis level as soon as the world economy recovers. In contrast, the alternative theory by Ljungqvist and Sargent (1998 and 2008) identifies forces by which the elevated unemployment during the crisis might result in a persistent increase in structural unemployment.[1] This theory focuses on how microeconomic turbulence at the worker level can cause individuals with disadvantageous labor market outcomes to become discouraged and to withdraw into benefit dependency.

The risk of increased long-term unemployment constitutes a real threat to Europe with its generous welfare programs. Policy makers would now be wise to introduce reforms that provide proper incentives to work as the world economy recovers. Acknowledging the limits that a social consensus in Europe exerts on how much benefits can be cut, we advocate a complementary way of realigning incentives – the imposition of social work requirements on benefit recipients. There have been various attempts of imposing such requirements in the past, but we argue that those earlier programs have generally failed, and discuss conditions for succeeding. We conclude that the present unemployment crisis poses both a challenge for policy makers as well as an opportunity to reform social safety nets to permanently improve their effectiveness.

Theory I: taxes and a high labor supply elasticity

In his theory of the European employment experience, Prescott (2004) focuses on measures of hours worked per person in working age rather than looking at classifications of inactive individuals as unemployed or as recipients of various welfare benefits. Table 1 contains three countries that illustrate Prescott's thesis where France and Germany represent and make up a large part of continental Europe. Employment is depressed in France and Germany

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[1] Total unemployment consists of frictional and structural unemployment. *Frictional* unemployment refers to the normal but time-consuming process of workers looking for jobs in an economy with search frictions. We let *structural* unemployment denote any additional unemployment that arises in a malfunctioning labor market. In the analysis of Ljungqvist and Sargent (1998 and 2008), frictional and structural unemployment become synonymous with short- and long-term unemployment, respectively.

Table 1

Labor supply, taxes, benefits and benefit dependency in working-age population

	France	Germany	US
Hours worked per person relative to the US (US =100)[a]			
1970–74	105	105	100
1993–96	68	75	100
Labor tax rate (%)[b]			
1970–74	49	52	40
1993–96	59	59	40
Net unemployment benefit replacement rates (%)[c]			
First year of spell	79	66	34
Second and third year of spell	63	63	9
Fourth and fifth year of spell	61	63	9
Benefit dependency rates (%)[d]			
1980	13.9	15.2	16.8
1999	24.2	22.4	13.7

[a] Prescott (2004, Table 1), data refers to population aged 15–64; – [b] Prescott (2004, Table 2); – [c] Martin (1996, Table 2), data refers to single-earner households without dependent spouse in year 1994, including housing benefits; – [d] OECD (2003, Table 4.1), data refers to population aged 15–64, measured on a full-time equivalent basis.

Sources: Martin (1996); OECD (2003); Prescott (2004).

by 32 percent and 25 percent respectively, relative to the United States in 1993–96. Prescott's (2004) model can account for these differences as well as the changes in employment from 1970–74 under the assumption that only taxes differ across countries and across time. The tax data in Table 1 shows that (i) the trans-Atlantic labor tax differential in 1993–96 is roughly 20 percentage points, and (ii) about half of that differential was already in place in 1970–74 when European employment was not depressed relative to the United States (but rather higher than that of the United States, as shown in Table 1). Evidently, the labor supply elasticity is very high in Prescott's model when tax increases in the order of 10 percentage points can generate such large reductions in employment.

To understand what gives rise to the high labor supply elasticity in Prescott's analysis, we need to review the aggregation theory of Rogerson (1988). Consider a large number of households who have to make labor supply decisions in a static model of a single period. Labor is indivisible in the sense that a household can only choose to work either full time or not at all.[2] A household left on its own in such a world, would choose to work if the wage is high enough and otherwise choose to stay idle, i.e. a household's behavior could be described in terms of a reservation wage such that for wages above (below) the reservation wage, the household chooses to work (to stay idle). But Rogerson (1988) demonstrated that this outcome is not an optimal one. Instead, each household's expected utility is higher if it could participate in an 'employment lottery', and then use lottery-outcome-contingent claims to insure its consumption against the uncertainty of the employment lottery. For example, a household that chooses a fifty-fifty chance of working could hold claims that guarantee a consumption level equal to that of an hypothetical person who chooses to supply labor to half of a job (even though that latter choice is infeasible since labor is indivisible). By so expanding the choice set of consumption levels (and the associated probabilities of working), the employment-lottery equilibrium does not only increase all households' expected utility, but it also gives rise to a high labor supply elasticity. As emphasized by Prescott (2005, 385), "the aggregate labor supply elasticity is much greater than the individual labor supply elasticity". Specifically, the equilibrium fraction of households working responds sensitively to small changes in the after-tax wage rate.[3]

Skeptics have expressed doubts about the microeconomic realism of employment lotteries and markets for insuring consumption against the lottery out-

[2] While the assumption of indivisible labor is a stark one, it does capture salient features in the real world where full-time jobs are dominant and even in the case of part-time jobs, there is considerable lumpiness in the observed number of hours worked. Reasons for labor being indivisible could be setup costs such as a worker's commuting time to work, and any startup time at work before an employee becomes fully productive. For these reasons, a firm that needs e.g. secretarial services is more likely to hire one secretary full time rather than eight secretaries, one for each working hour of the day.

[3] A critical assumption in Prescott's analysis is that tax revenues are handed back lump sum to the households. If instead tax revenues were used to finance benefits for the unemployed, equilibrium employment would plummet much further than what is predicted by Prescott, as we discuss next in the main text. In contrast, if instead the tax revenues were used for public goods or wasted, taxation would have hardly any effect on equilibrium employment. The reason for the latter outcome is that Prescott, like most macroeconomists, specifies a utility function that is consistent with balanced growth. Specifically, in spite of all economic growth in the last half century, households in the United States continue to work about the same number of hours per capita, see Prescott (2005). To be consistent with this fact, the utility function is such that the income and substitution effects cancel each other when the real wage increases over time – a higher wage means higher *income* so that a household would like to consume more of everything including leisure, but a higher wage also means that the relative price of leisure has gone up so that the household would like to *substitute* away from leisure toward consumption of goods. A corresponding argument (with the opposite signs) would apply to a tax increase that reduces the after-tax wage. But Prescott's assumption that tax revenues are handed back lump sum to households arrests the income effect and hence, the remaining substitution effect explains why higher taxes in Europe cause households to work less. For a further discussion, see Ljungqvist and Sargent (2006).

comes. In the Handbook of Macroeconomics, Browning, Hansen and Heckman (1999, 602) voice a common criticism of these models when arguing that "the employment allocation mechanism strains credibility and is at odds with the micro evidence on individual employment histories". Ljungqvist and Sargent (2006) offer still another criticism by showing that the employment-lottery model is not compatible with the existence of generous welfare benefits such as those of Europe. For example, if the French unemployment insurance system replaces 60 percent of lost labor income as suggested by Table 1, Ljungqvist and Sargent (2006) show that Prescott's model implies that French employment should be depressed by 66 percent relative to the United States, i.e. more than twice the actual outcome. The reason for this counterfactual outcome is that Prescott's high labor supply elasticity does not only make employment respond sensitively to tax levels but also to benefit levels.

For our present purpose to predict the unemployment consequences of the current crisis, we conclude that Prescott's theory implies that employment will return to its pre-crisis level as soon as the world economy recovers. According to Prescott's analysis, employment outcomes in the future would only be different if tax policies were changed.

Theory II: benefits and increased turbulence

The analysis of Ljungqvist and Sargent (1998 and 2008) differs from that of Prescott (2004) in two critical dimensions: First, the analysis now includes generous European unemployment benefits, at the level of the empirical estimates in Table 1. Second, the disutility of work is much lower than that of Prescott's analysis. Because of the lower disutility of work, Ljungqvist and Sargent's theory can explain why European labor market outcomes were not much different from those of the United States until the late 1970s despite much more generous benefits as well as higher taxes in Europe as compared to the United States.[4] According to that theory, European workers prefer to work and reap their full labor market earnings rather than collecting benefits of around 60 percent of foregone wage earnings. At least, this was true until the late 1970s.

So what happened at the end of the 1970s and the beginning of the 1980s that can explain the outbreak of high and persistent European unemployment? Ljungqvist and Sargent (1998 and 2008) argue that the cause is an increase in microeconomic turbulence in Europe as well as in the United States and elsewhere. It is a widely held notion that the economic environment has become more turbulent in the last three decades and, for example, OECD (1994) suggests that liberalization and deregulation of markets, heightened technological change, especially in information technologies, and the trend towards globalization have contributed to this development. While not taking any stand on the precise sources of turbulence, Ljungqvist and Sargent base their analysis on the well documented findings of increased labor earnings instability (e.g. see the survey of Katz and Autor (1999)). As in the data, turbulence is assumed to impinge on labor market outcomes for individual workers. The predictions of the theory is that turbulence should have led to long-term unemployment in Europe, where the unemployed with spells longer than one year should make up approximately half of all the unemployed, but there should not have been much of an effect on US unemployment outcomes. This is indeed an accurate characterization of the trans-Atlantic employment experience since the 1980s until the present financial crisis.

According to the theory of Ljungqvist and Sargent (1998 and 2008), unemployment benefits with generous replacement rates are not much of a problem in tranquil times when laid off workers can find new jobs with pay comparable to previous earnings. But the adverse incentive effects of such generous benefits come unleashed in times of economic turbulence when unlucky workers experience shocks that diminish their earnings potential – old human capital becomes obsolete because of new technologies, firm-specific and industry-specific skills are lost during restructuring in response to increased international competition, union wage premia fall after deregulation, etc. Displaced workers in Europe who find themselves under these circumstances will have a hard time to find new jobs that are acceptable to them. Their earnings potential have fallen, yet they compare any job prospects with their lost earnings since benefits are based upon past earnings via replacement rates. Because of the difficulty in find-

[4] In fact, European unemployment rates were significantly lower than those of the United States before the late 1970s (which is consistent with Prescott's employment data in Table 1 that shows France and Germany ahead of the United States by 5 percent in the early 1970s). The analysis of Ljungqvist and Sargent (2008) attributes this outcome to European employment protection that reduces labor mobility and therefore, suppresses frictional unemployment. For a summary of the analysis and the historical record, see Ljungqvist (2003).

ing acceptable jobs, many displaced workers become discouraged and they reduce their search intensities in the job market which further exacerbate the adverse effects of generous benefits in turbulent economic times. In contrast, in an economy with stingy rules for unemployment benefits, such as in the United States, the theory predicts that the unemployed workers 'bite the bullet' and search intensively for less well-paying jobs as compared to their lost earnings.[5]

From the perspective of the theory of Ljungqvist and Sargent (1998 and 2008), the unemployment consequences of the current crisis depend on who make up the presently swollen ranks of the unemployed. On the one hand, if the additional unemployed are temporarily laid off from firms that intend to rehire them after the crisis has receded, or more generally, if the market value of the unemployed's skills is unaffected by the crisis, the theory would predict that there is no force other than the sluggishness of the recovery itself that slows down the reversion of unemployment to its pre-crisis level. On the other hand, if the extra unemployed suffer the type of negative shocks to earnings potential as the theory uses to explain why Europe has experienced high long-term unemployment in the last three decades, then the future outlook for Europe looks yet bleaker. It becomes more important than ever to reform benefit systems in order to insure proper incentives to work. Before turning to a reform proposal for Europe, we first discuss recent research that holds out the promise of settling some of the dispute between advocates of theory I and II, respectively.

A life-cycle perspective imparted on theory I and II

Sometimes research in economics leads to surprising results. At a first glance these results might seem perplexing but then they enhance our understanding and we gain new insights. One such example is Ljungqvist and Sargent's (2006) inquiry into the determinants of the high labor supply elasticity implied by Rogerson's (1988) aggregation theory that was used by Prescott (2004 and 2005). In a life-cycle model, Ljungqvist and Sargent (2006) close down the insurance markets and the employment lotteries, and assume that households must rely on savings to smooth consumption between times of working and not working. Under the additional assumptions of no uncertainty and no accumulation of human capital, this alternative model (surprisingly enough) generates the very same aggregate labor market outcomes as the employment-lottery economy. But now the households choose fractions of their lifetimes spent working rather than probabilities to work in an employment lottery. The implied high labor supply elasticity is also shown to be numerically robust in more general settings with both uncertainty and positively-sloped experience-earnings profiles.

By abandoning the contentious notion of employment lotteries and replacing it with individuals choosing career lengths, a consensus should emerge about the proper objective of inquiry – individual workers' lifetime labor supply.[6] So what would such a consensus say about the implication of theory I that a 10 percentage point increase in German and French labor taxes can explain why the employment of these economies is 25 to 32 percent depressed relative to the United States? The first thought might be that it lends support to Prescott's analysis since a high labor supply elasticity does emerge in a life-cycle model as long as individual workers' choice of career lengths is at an interior solution. It is certainly true that people do not work their entire lives, so it might seem to follow that their choice of career lengths is at an interior solution and hence, the aggregate labor supply elasticity should be high. But the answer is more complicated than so.

If we were to ask individuals with a strong attachment to the labor force about their planned retirement age, the most common answer would probably be the official retirement age in the government-run retirement benefit program. If that is so, individual workers' choice of career lengths is not at an interior solution but rather at a corner solution. Many retirement systems are associated with implicit tax wedges so as to compel large numbers of workers to retire at the official retirement age. At such a corner solution for career length, small increases in labor taxes would not affect individuals' planned retirement age because the alternative of enjoying privately financed early retirement would not be attrac-

[5] For a further concise description of the facts and the theory of Ljungqvist and Sargent (1998 and 2008), see Ljungqvist (2003) from where this last paragraph is excerpted.

[6] Prescott (2006a) embraced the Ljungqvist and Sargent (2006) life-cycle framework with indivisible labor as "the initiation of an important research program … to derive the implications of labor indivisibility for lifetime labor supply". While Prescott's (2005) original Nobel lecture was devoted to the employment-lottery aggregation theory, a subsequent version (Prescott 2006b) contains an added section on 'The Life Cycle and Labor Indivisibility'.

tive enough. Thus, the reasoning above that seemed to lend support to theory I fails.

In contrast, Kitao, Ljungqvist and Sargent (2008) enrich and strengthen theory II in an explicit life-cycle model. While workers originally plan to retire at the official retirement age in that model, individuals who suffer unforeseen negative labor market shocks will re-optimize their planned career lengths, especially in Europe where benefits are generous for the long-term unemployed and for those who claim disability. The risks for negative earnings shocks are assumed to be the same for all workers, but the theory predicts that older workers are more prone to withdraw from active labor market participation in response to such shocks. The reasons are that older workers are closer to the official retirement age which makes it less attractive for them to start investing in new careers after negative labor market shocks, and older workers are also at the peak of their lifetime earnings, so benefits based on past wage earnings are relatively generous. Hence, the outcomes of theory II are the same as those stressed by President Barroso of the European Commission when he deplores the fact that European workers "start exiting the labor market on a very large scale by the time they reach 55 years of age" (European Commission 2005, 26).

As described, theory II can explain why a more turbulent economic environment since the late 1970s has caused high long-term unemployment to erupt in Europe while leaving US labor market outcomes largely unaffected. The theory predicts correctly that older workers are the ones who are most likely to suffer from long-term unemployment.[7] Regarding the elevated unemployment in the present financial crisis, the same theory warns of dire future unemployment consequences for Europe if the additional unemployed in the crisis are affected by the kind of negative individual shocks that have driven the high European unemployment rate for the last three decades. If so, the additional unemployed today are likely to add to the ranks of tomorrow's long-term unemployed, and this risk is highest for older unemployed workers. Hence, it is more important than ever to reform social safety nets so that there are proper incentives to work as the financial crisis recedes and the world economy recovers.

Reform proposal: social work requirements

There are two ways of strengthening incentives to work – the return to working can be increased and the return to being unemployed can be decreased. Examples of policy changes that operate on these two margins are reductions of labor taxes and cuts in benefits, respectively. There are constraints on how far any one of these measures can be taken. The fiscal needs to finance the extensive welfare states of Europe place restrictions on how much taxes can be reduced. Societal preferences or norms impose limits on how much benefits can be cut before benefit levels are deemed to be too stingy and to not provide enough of a social safety net for the unlucky ones. For example, it is probably safe to say that there is a strong European sentiment that the low benefit levels for the long-term unemployed in the United States would not be acceptable in Europe. The question becomes then how to reform the unemployment insurance system so that it provides proper incentives while preserving the social fabric of Europe. One answer is that proposals to decrease the return to being unemployed do not necessarily have to take the form of benefits cuts but could also be accomplished by reducing the amount of leisure available to the unemployed.

We propose a system that requires the long-term unemployed to perform 'social work'. While different forms of work requirements have been tried in the past, e.g. the so-called one-euro jobs in Germany, we think that past measures have had limited success because of failing to address a number of issues that we lay out below. A common flaw of past measures has been the lack of an infrastructure that is both sustainable and commensurate to the size of the problem of benefit dependency in Europe. To envision a successful policy reform, we discuss general principles for program design, particular program features of concern to participants, and considerations during an implementation phase.[8]

[7] Kitao et al. (2008) analyze also youth unemployment. New labor market entrants are assumed to go through a phase of inexperience before they settle into careers. The phase of inexperience is associated with considerable job churning which explains why young workers typically experience higher unemployment than adult workers across countries and throughout time. But why have many European countries seen additional increases in youth unemployment rates in the last decades? In the model of Kitao et al. (2008), it is a challenge to generate such outcomes because young individuals are eager to begin their careers and to accumulate job experience that will lead to higher earnings. To frustrate those ambitions in the European economy of the model, it is assumed that there is a minimum wage that restricts the set of admissible job opportunities – a barrier that mainly affects inexperienced workers with their lower potential earnings. On the prevalence of much higher minimum wages in Europe as compared to the United States, see e.g. Dolado et al. (1996).

[8] For an earlier exposition of this line of argument, see Ljungqvist (1999).

Program perspective

(a) Comprehensive and sustainable system: the sheer size of benefit dependency in Europe calls for a large-scale reform. A social-work program should not only accommodate a large number of benefit recipients but must also be made viable in the long run.

(b) Delimitation of social work from employment: to avoid interference with the functioning of a market economy, clear boundaries must be established between social-work assignments and regular employment in the private as well as in the public sector. The delimitation should be further accentuated by the feature that social work entitles to the continued collection of benefits rather than any wages or salaries.

(c) Useful assignments with few prerequisites: besides that there is no reason for wasting the resource that social-work participants constitute, meaningful assignments help to build general support for the program. Because of the diverse backgrounds of benefit recipients and the expected high turnover in social work, there cannot be much of prerequisites for social-work assignments.

Participant perspective

(a) Gradual increase of social-work requirements: at the beginning of unemployment spells, benefit recipients should have most of the time free to look for jobs. The anticipation of a future imposition of social-work requirements, like the anticipation of any future reductions in benefits, strengthens the incentives to find regular employment.

(b) Self-selection of participants: if the states of long-term unemployment and regular employment are not that different in terms of hours devoted to either social or regular work, individuals with sufficient abilities can be expected to self-select out of benefit dependency. Though, social work would continue to provide a meaningful social context to individuals who cannot make that transition for various reasons.

(c) Fair and predictable rules: to make social work feasible for most individuals, the assignments should neither be too physically demanding nor involve predominately outdoor tasks. Fairness and predictability are insured by offering all benefit recipients the same opportunities and obligations regarding social work.

Implementation perspective

(a) Gradual phase-in with anticipatory effects: a full implementation of a social-work program would take time, but a credible reform announcement followed by a gradual but deliberate implementation would have immediate incentive effects. In anticipation of the program's full implementation, benefit recipients with sufficient abilities would already start to search for regular employment.

(b) Promotion of rigorous analysis in mass media: a major policy reform is meant to have large effects, but in individual cases there might also be unintended, adverse consequences. To balance the media's rightful coverage of such individual cases, the government must promote an overall analysis of how the reform will reshape incentives and why that is necessary for the fiscal sustainability of the welfare state.

(c) Moral and fiscal 'high ground': while there is a wide consensus in Europe to preserve the welfare state, there are also growing concerns for fiscal sustainability and social cohesion in times of increasing benefit dependency rates. It is therefore likely that social work will be deemed as being fair, and be seen as an opportunity for benefit recipients to make contributions to society in exchange for the support received.

Challenge and opportunity

While the present unemployment crisis poses a major challenge for policy makers, it is also an opportunity to reform social safety nets to permanently improve their effectiveness. The crisis is an especially opportune time to introduce social work for benefit recipients. While social work might be welcomed as a way to create productive activities for the unemployed until the demand for labor picks up again, it should be made clear that social work is here to stay to tackle structural unemployment in Europe. It could become the reform of the century.

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