



The long queues of unemployed workers at factory gates during the Great Depression suggest that jobs are lacking in recessions, irrespective of the amount of effort that the jobless put into searching for them.

Pascal Michailat explains how this seemingly simple insight has important implications for today's economic policy debates.

Jobs in a recession

Anyone who has watched Charlie Chaplin's film *Modern Times* knows that people queue for jobs in recessions. In a famous scene, Chaplin opens the newspaper and learns that his old factory is rehiring. He runs off to the factory where he meets hundreds of people seeking employment. The last one to sneak through the gate, Chaplin gets a job while many others are left queuing outside the factory gates.

The model of 'equilibrium unemployment' developed by Peter Diamond, Dale Mortensen and CEP's Christopher Pissarides – for which they were awarded the Nobel Prize in 2010 – provides a very appealing description of the labour market because it describes the creation of jobs by firms, the search for vacant jobs by unemployed workers and the process of matching firms with workers.

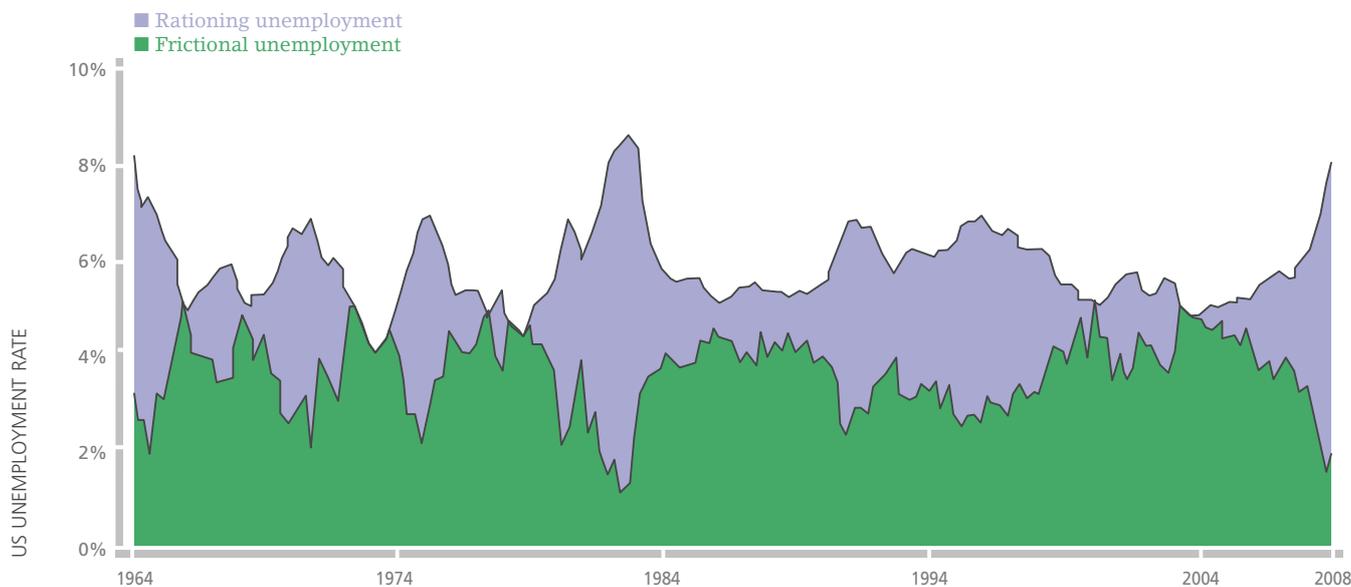
But the model seems inadequate to describe the recessionary unemployment of the Great Depression and more recent times when the business cycle has turned down. The search model of unemployment is inconsistent with the existence of queues in recessions: it converges to full employment when unemployed workers devote an arbitrarily large effort to search for jobs. In other words, all unemployed workers could find a job if they searched sufficiently.

My research develops a model that builds on the equilibrium unemployment model, but which is consistent with the existence of queues in recessions. In my model, jobs are rationed in recessions so that no amount of effort will allow all workers to find a job.

Unemployment is the sum of a rationing component and a frictional component. *Rationing unemployment* measures the job shortage in the economy. *Frictional unemployment*

In recessions, the labour market functions as a rat race: forcing people to search harder will not create more jobs, only more competition in the queues

Figure 1:
Rationing unemployment and frictional unemployment



Source: Michailat (2010)

measures additional unemployment due to frictions in matching firms with workers.

The key feature of the model appears in Figure 1, which plots a simulation of US unemployment and its decomposition into rationing unemployment (the blue area) and frictional unemployment (the green area). There is no rationing unemployment in expansions, but there is as much as 8% of rationing unemployment in deep recessions. Frictional unemployment may be as high as 5% in expansions, but it falls well below 2% in deep recessions (Michailat, 2010).

Even though the labour market always sees vast flows of jobs and workers and a great deal of matching activity, recessions – as in the early 1980s, the early 1990s and the late 2000s – are periods of acute job shortage during which matching frictions have little influence on labour market outcomes.

The intuition is simple once we think about queues. In recessions the firm can hire a new worker immediately, at no cost, in the queue in front of the factory gates. If the firm does not hire a new worker, it is not because of recruiting costs but because it would not know how to use an extra worker. With this result in mind, we can think about the design of economic policies over the business cycle.

When unemployment is high, a critical

Unemployment insurance should be more generous in recessions and less generous in expansions

policy is unemployment insurance. We often hear economists asking for unemployment benefits to be lowered in recessions. They argue that a reduction of unemployment benefits would force jobseekers to spend less time on the couch and more time actively searching for a job. As a result, they say, unemployment would fall and the economy would recover.

They are probably right about the first point that workers would spend more time off the couch searching for a job. But they are mistaken about the second point that unemployment would fall because they forget that people queue for jobs in deep recessions. Once this feature is incorporated into a model, unemployment does not depend much on the efforts of



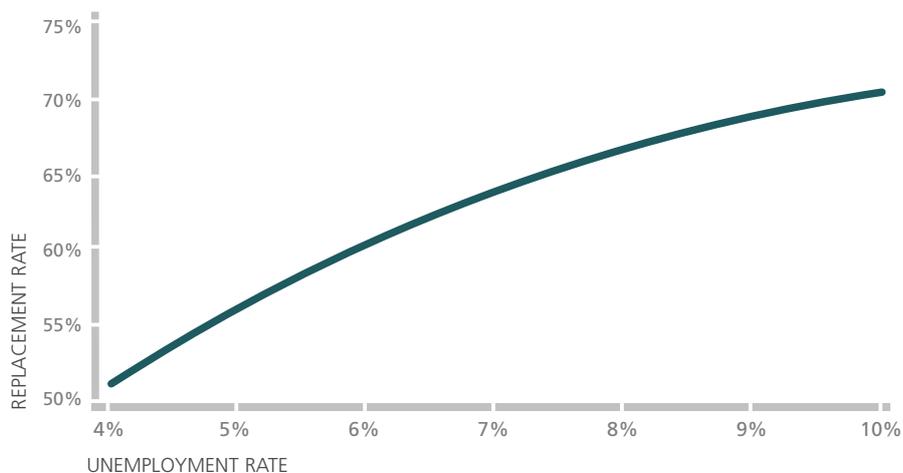
jobseekers in recessions (even when the economy has not reached the point where queues form in front of factory gates).

To understand how to design unemployment insurance in a model consistent with the existence of queues in deep recessions, I collaborated with Camille Landais and Emmanuel Saez.

Our main result is displayed in Figure 2, which plots the optimal replacement rate – the amount transferred to unemployed workers expressed as a fraction of the income of employed workers – as a function of the unemployment rate. It is optimal to increase the generosity of unemployment insurance in recessions: the replacement rate increases from 51% to 71% when unemployment increases from 4% to 10% (Landais et al, 2011).

Again, the intuition for this result is simple once we think about queues. What would happen if the government drastically reduced unemployment benefits in recessions? Perhaps unemployed workers would spend eight hours a day in job queues, instead of four hours in the queue and four hours on the couch. This reduction in benefits implies that there are now, say, 200 people instead of 100 people continuously queuing in front of the factory gates.

Figure 2:
Optimal unemployment insurance over the business cycle



Source: Landais et al (2011)

But the larger number of applicants does not matter for the firm. I have already argued that if the firm does not hire a new worker, it is not because of recruiting costs but because it would not know how to use an extra worker. While lower unemployment benefits do make unemployed workers poorer, they do not

reduce unemployment much. So reducing unemployment insurance in recessions is undesirable.

Some will say that this argument cannot possibly be correct. We (economists) know that when an unemployed worker loses his entitlement to unemployment benefits, he finds a job



The government should invest in infrastructure in recessions rather than expansions to avoid crowding out private employment

much more rapidly than before. That is true. Think about the queues. If you lose your benefits, you will fight your way to the gate and increase your chance of getting the job when there is an opening. But when you move up the queue, the workers that were in front of you are now behind you, and they move down the queue.

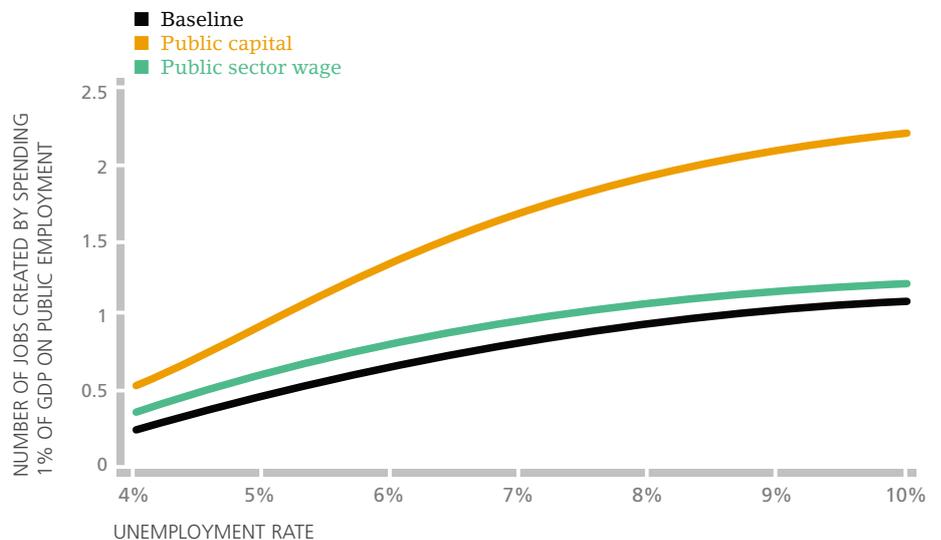
The labour market functions as a rat race in recessions. Forcing people to search harder will not increase the number of people who find a job. It may only change who finds a job. So it is not desirable to make unemployed workers poorer. It will not create more jobs, only more competition in the queues.

Finally, fiscal policy may be useful to reduce unemployment in recessions. One common complaint about fiscal policy, however, is that it may negatively affect the private sector. These negative effects may undo the possible beneficial effects of the policy.

For example, during the Great Depression, US fiscal policy took the form of public employment. President Roosevelt's administration hired millions of unemployed people to build dams, bridges and roads. The goal of public



Figure 3:
Fiscal multipliers over the business cycle



Source: Michailat (2012)

The government disturbs private employers much less when it hires workers in recessions instead of in expansions

employment was to bring unemployed workers back to work.

But the Roosevelt administration was concerned that the public jobs created as part of the New Deal might make it more difficult for private firms to hire workers by taking away job applicants. They thought that if a mason were hired by the government to work on a public building, it could prevent a construction firm from filling a vacant mason job. If each public job displaced a private job, then it would indeed be ineffective to resort to public employment.

My research shows that while the Roosevelt administration would be right to worry about the displacement of private jobs by public jobs in expansions, there is barely any displacement in recessions. Public employment is especially effective at stimulating the economy at any time when the labour market is depressed.

This result is illustrated in Figure 3, which displays the increase in the employment rate achieved by spending 1% of GDP on public employment. In the basic model (the black line), the number of jobs created by public employment increases nearly fourfold from 0.27 to 1.15 when the unemployment rate increases from 4% to 10% (Michaillat, 2012).

The number of jobs created is larger when public sector employees contribute to improving infrastructure (the orange line) because building public capital improves productivity in the private sector, which translates into higher private employment in the future. The number is also larger when public jobs pay somewhat below private jobs (the green line, which is obtained with a 5% wage premium in the private sector).

These results suggest that the Roosevelt administration responded appropriately by hiring workers as part of large infrastructure projects, and by paying relief-job wages typically well below private sector wages.

The model is too simple to be the basis for quantitative estimates of the effects of actual fiscal policy interventions. Nonetheless, it has some theoretical features that could guide the design of policies in recessions.

A first feature is that to maximise the benefits to society as a whole, unemployment insurance should be more generous in recessions and less generous

in expansions. Another feature is that the government disturbs private employers much less when it hires workers in recessions instead of in expansions.

An implication is that if the government needs to conduct infrastructure projects, it should plan to do it in recessions instead of expansions to avoid crowding out private employment. Another implication is that if the government needs to lay off public sector employees, it should do it in expansions instead of recessions so that public employees who are laid off are able to find a job rapidly in the private sector.

Pascal Michaillat is a lecturer in economics at LSE and a research associate in CEP's labour markets programme. This article draws on some of his recent research papers:

Pascal Michaillat (2010) 'Do Matching Frictions Explain Unemployment? Not in Bad Times', CEP Discussion Paper No. 1024 (<http://cep.lse.ac.uk/pubs/download/dp1024.pdf>) and forthcoming in the *American Economic Review*, June 2012

Camille Landais, Pascal Michaillat and Emmanuel Saez (2011) 'Optimal Unemployment Insurance over the Business Cycle', CEP Discussion Paper No. 1078 (<http://cep.lse.ac.uk/pubs/download/dp1078.pdf>)

Pascal Michaillat (2012) 'Fiscal Multipliers over the Business Cycle', CEP Discussion Paper No. 1115 (<http://cep.lse.ac.uk/pubs/download/dp1115.pdf>)

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