Comment on Mike Orszag and Dennis Snower: Anatomy of policy complementarities

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It is difficult to disagree with the general idea of the paper, which involves broadening the set of policy instruments, making policy decisions jointly as part of an overall strategy, and finding ways to compensate those who may lose from labour market reforms. These are all sensible suggestions. However, I believe that the paper overstates the case for economic and political complementarities. The paper is written in a suggestive and somewhat seductive style, where possible counter-arguments are ignored or discreetly swept under the carpet. I will play my role as the devil's advocate and try to bring some neglected issues back into the daylight.

1. Economic complementarities[1]

If two policies are available to fight unemployment, it is certainly true that one gets stronger effects by using both policies rather than just one of them; a two-armed approach to unemployment policy has much to recommend it. But the hypothesis of economic complementarity (EC) involves a much stronger claim. The claim is that policies typically *reinforce* each other. In the example of the Orszag & Snower paper, the positive effect on employment of a cut in benefits is stronger if taxes are lower. EC is about positive *interaction* effects, a specific mathematical property of theoretical models of unemployment.

Theories of unemployment, and economic theories in general, are rarely very precise about functional forms. We primarily use theories to deduce implications about qualitative relationships, i.e., to make sign predictions. For example, most models imply that an increase in unemployment compensation causes higher unemployment. EC involves sharper statements as we are offered results concerning the determinants of the magnitude of a response, besides the direction of the response. We

[1] Coe & Snower (1997) discusses the case for economic complementarities in more detail.

are not only given the sign of the first derivative but also the sign of the cross-partial derivative.

My immediate reaction to this EC claim is that economic models are, in general, unlikely to offer much specific information on these interaction effects. In any event, any results are likely to be rather fragile. Results that hinge on functional forms will probably not be robust across different kinds of models.

I have examined whether EC holds in the well-known matching model of equilibrium unemployment due to Pissarides (1990). Figure 1 illustrates the model, where unemployment (U) and vacancies (V) are on the axes. The UV curve captures frictions in the search process; increased "mismatch" corresponds to a shift of the UV curve to the right. The VS curve incorporates wage setting and labour demand; increased wage pressure produces a downward shift of the VS curve. Consider a particular policy that reduces unemployment, such as a cut in unemployment compensation (an upward shift of the VS curve). The EC hypothesis states that the magnitude of the ensuing fall in unemployment depends on the values of other parameters that influence unemployment.

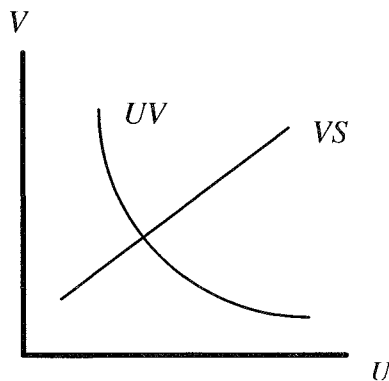## Figure 1. Unemployment and vacancies in the matching model

Table 1 shows the results of some policy experiments using a calibrated version of the model. There are three policy experiments: the replacement rate in unemployment insurance, a labour market policy that improves the matching technology (shifts the UV curve to the left), and a policy that reduces hiring costs. The parameters are chosen so that unemployment is 10% in a base run with a replacement rate of 60%. Changes in the replacement rate affect unemployment

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in a predictable fashion. Column 2 shows the effects of identical policies with respect to replacement rates as in column 1, but with a more efficient matching technology (a UV curve closer to the origin); the "productivity" parameter of the matching function is increased so as to produce an unemployment rate of 9% when the replacement rate is 60%. Column 3 takes the matching function of column 1 but with lower hiring costs (so as to give 9% unemployment at a replacement rate of 60%).

A comparison of the changes in unemployment in column 1 with those in columns 2 and 3 reveals little support for EC. The responsiveness of unemployment-to-benefit changes differs very little between the three columns. Of course, these examples do not prove that EC can never occur, but they indicate that it is hardly a pervasive feature of models of unemployment. One may also add that taxes do not matter for unemployment in this particular model, and there is thus no interaction effects between benefit policies and tax policies.

Table 1. Effects on unemployment of changes in replacement rates

Replacement rate (%)	Unemployment (%): base runs	Unemployment (%): less mismatch	Unemployment (%): lower vacancy cost
	(1)	(2)	(3)
70	11.8	10.7	10.6
60	10.0	9.0	9.0
50	8.8	7.9	7.9
40	7.9	7.1	7.1

Notes: The model is essentially the one presented in Pissarides (1990), chapter 1. The benefit level is set as a fixed proportion of the worker's consumer wage, and the vacancy cost is proportional to the wage cost. A payroll tax finances the benefits. The parameters in column 1 are as in Holmlund and Lindén (1993) except for the replacement rates, the bargaining power of the worker and the productivity factor in the Cobb-Douglas matching function The worker's bargaining power is set to 0.5 when the replacement rate is set to 60%; the matching technology parameter is chosen so as to produce 10% unemployment. In column 2, I increase matching efficiency so as to reduce unemployment to 9% at a replacement rate of 60%. In column 3, I reduce the vacancy cost so as to obtain 9% unemployment at a replacement rate of 60%, using the matching technology of column 1.

All in all, I am not convinced that EC is a very important feature with the potential to explain why policies have had weak effects. But it is a conjecture worth considering, and it is, in principle, testable. So

those who do empirical work using aggregate data may need to take functional form issues and interaction terms more seriously than they have done so far; empirical evidence on EC is virtually non-existing. Moreover, it seems unlikely that robust empirical evidence on interaction effects will show up soon. There is still little consensus on the main effects on unemployment of, say, tax policies, so we will probably have to wait some time before we can confidently assess the role of interaction effects.

2. Unemployment and tax reform

The paper devotes considerable attention to an interaction effect between benefit reforms and tax reforms. The basic argument is that higher taxes reduce the rewards to job search, but in general, other mechanisms are conceivable, for example, through wage setting. It is a general property of models of equilibrium unemployment that a higher payroll (or income) tax rate increases unemployment in so far as it increases the effective replacement rate in unemployment compensation, i.e., the net income while unemployed relative to the net income while employed. The details here depend on the form of the (instantaneous) utility function and on institutional rules regarding unemployment insurance (UI) payments, for example, whether benefits are taxable income and how benefits are adjusted to the general level of wages.

The paper makes use of an iso-elastic instantaneous utility function, where utility is increasing in consumption and leisure. A rise in the demand for leisure among the unemployed means that they spend less time searching for jobs and thus are less likely to be hired; a rise in the demand for leisure among the employed means that they reduce work effort and therefore are more likely to be fired. Unemployment increases in either case. It is straightforward to show that the chosen formulation gives relationships for leisure when unemployed (l_u) and employed (l_e) of the form:

$$l_u = \kappa_0 \left[\frac{b(1-t_b)}{w(1-t_w)} \right]^{\kappa_1} \equiv \kappa_0 \rho_e^{\kappa_1}$$

$$l_e = \kappa_2 \left[\frac{b(1-t_b)}{w(1-t_w)} \right]^{\kappa_3} \equiv \kappa_2 \rho_e^{\kappa_3}, \qquad \kappa_i > 0, i = 0, \ldots, 3$$

ρ_e is the effective (or after-tax) replacement rate, i.e., the ratio between net income when unemployed, $b(1-t_b)$ and the net wage when employed, $w(1-t_w)$; t_b and t_w are tax rates relevant for benefit income and wage income. What matters for behaviour is thus the effective replacement rate. A rise in ρ_e increases the demand for leisure which in turn contributes to higher unemployment by reducing the hiring rate (lower search effort among the unemployed) and increasing the firing rate (more "shirking" among the employed). With a proportional tax system with taxable benefits we would have $t_b = t_w$ and the crucial variable would be the gross replacement rate, b/w.

Real-world UI systems typically allow for some adjustments of benefits to changes in wages; the real value of benefits increases as real wages increase. This political outcome is commonly imposed in theoretical models in the form of an assumption of fixed replacement rates, i.e., replacement rates that are independent of wages. This delivers the result that unemployment will be constant in a growing economy with rising real wages; unemployment will thus be independent of the level of productivity, which is an attractive feature of any model of equilibrium unemployment. If we have $t_b = t_w$ and $\rho = b/w$ is the fixed (gross) replacement rate, it is clear that taxes do not affect the worker's optimal amount of leisure. If $t_b = 0$, $t_w > 0$, and $\rho = b/w$ is fixed, we get the result that lower taxes reduce the effective replacement rate and thereby unemployment. In this case we also get complementarity between tax and benefit reform. A cut in benefits has a stronger effect on search effort if the tax rate is lower.[2]

The bottom line of this discussion is that taxes may matter for unemployment, but they do so only if they affect the effective replacement rate. It is an open question if this is empirically plausible or not. Benefits are taxable income in many countries, in which case general tax cuts may have little effect on replacement rates. But things become more complicated if we allow for other income sources, such as income from capital or income from the black economy.

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[2] This follows immediately from the fact that the effective replacement rate is $\rho_e = \rho / (1-t_w)$.

3. Political complementarities

Let me now turn to the paper's discussion of the political economy issues. The paper notes the conflicts of interest between employed and unemployed workers regarding the desired benefit-tax combinations. The unemployed want higher benefits than the employed because they are out of work today; the employed also value benefits because they may be out of work tomorrow. But tomorrow is another day: it is less important than the present situation because of discounting.

I do not have much to add to this discussion except the remark that EC does not seem to be crucial for the analysis. The conflict of interest between employed and unemployed workers would still be there even absent EC.

How can then Pareto improvements be achieved, i.e., policies that are acceptable to both employed and unemployed people? The paper mentions employment vouchers. I like the idea, but it has to be added that the paper does not provide a very detailed discussion of the pros and cons of employment vouchers. And it would have been useful to include some discussion of the real-world experience of employment vouchers.

4. Concluding remarks

Let me conclude with two more general reflections on the political economy aspects of labour market reform. First, this is an infant industry with a growing number of theoretical contributions but so far very little empirical work. So it would seem natural to ask for more empirical studies in this field. But the problem is that empirical work on these issues seems more difficult than usual. The reason is that almost everything we could think of becomes endogenous. In standard work, we try to explain unemployment by various policies, for example benefits, taxes, employment protection legislation, and so on. If we take the political economy perspective seriously, we would have to recognise the possibility that the policies are themselves responsive to actual unemployment experiences. Causality runs in both directions and it is not at all clear how one can deal with these problems in practice; identification of causal relationships is bound to be difficult.

Take one example: The Swedish employment-protection legislation of 1974 was almost certainly partly driven by a perceived increase in labour market insecurity associated with restructuring in the late 1960s. And another example: in several countries, actual rules for the duration of

benefit payments depend on how actual unemployment evolves. So causality runs in both directions and it is not easy to say whether the chicken or the egg came first.

The second reflection is about the role of policy advising when policies are chosen endogenously. Is there any point in suggesting a particular policy to the government when the government is an optimising agent? Should we completely refrain from policy advising, knowing that the government does not care? Should we restrict attention to what seems to be politically feasible policies or should we be bold and always recommend what we believe to be the best policy? We may have to reconsider the role of economists as policy advisors if we are taking the political economy perspective seriously.

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