Research in Economics 69 (2015) 26–36

Contents lists available at ScienceDirect

Research in Economics

journal homepage: www.elsevier.com/locate/rie

Can active labor market policy be counter-productive?

Gilles Saint-Paul [a,b,*]

[a] Paris School of Economics, France
[b] New York University, Abu Dhabi, United Arab Emirates

ARTICLE INFO

Article history:
Received 24 October 2014
Accepted 7 November 2014
Available online 15 November 2014

Keywords:
Active labor market policies
Job matching
Hosios condition

ABSTRACT

We study active labor market policies (ALMP) in a matching model with heterogenous workers. ALMPs are modeled as a subsidy to job search, and search takes place along an extensive margin. An additional job seeker affects the quality of unemployed workers. As a result, the Hosios conditions for efficiency are no longer valid: to replicate the optimum the worker share in bargaining must exceed the Hosios level, and one must impose a tax on job search activity. We also characterize the coalition in favor of ALMP.

1. Introduction

This paper studies the effect of active labor market policies (ALMP) in a Mortensen-Pissarides style matching model. ALMPs are modeled as a subsidy to job search, and it is assumed that search activity is observed. A key feature of the model is that workers differ in their productivity, and that search takes place along an extensive margin. The model is used to study the effect of ALMP on the equilibrium, on aggregate welfare, and, equally importantly, on the distribution of welfare across worker types (productivity levels) and current labor market status (employed vs. unemployed).

It is shown that in addition to the usual job search externality, there is a "quality" externality. As search is not directed, an additional job seeker affects the average quality of the pool of unemployed, in addition to the job finding rate. As a result, the usual "Hosios" conditions for an efficient outcome – that the bargaining share of workers match their elasticity in the matching function – are no longer valid.[1] For an efficient outcome, the decentralized equilibrium conditions must match the optimal ones for both the job creation margin of firms and the job search decision of workers, and these two conditions cannot be matched with a single instrument. It is shown, paradoxically, that to replicate the optimum one must select a worker share in bargaining which is larger than their elasticity in the matching function, and at the same time one must impose a tax on job search activity.

Clearly, this prediction does not validate the view that ALMPs are a desirable policy tool. The reason is that they raise workers' outside option in bargaining, thus contributing to wage pressure, while at the same time reducing the average quality of job seekers. The optimal policy outlined above delivers an improved quality of job seekers, due to the search tax, while the bargaining share in excess of the Hosios level compensates for the implied reduction in the workers' outside option.

Also, I characterize the effect of ALMP on different categories of workers. This allows us to investigate the political economy of ALMP. Despite their negative effects on aggregate welfare, we can characterize a coalition in favor of ALMPs.[2] These are favored by the least productive job seekers (or "short-term" unemployed) and the least productive workers.

* Correspondence address: Paris School of Economics, France.
E-mail address: gstpaulmail@gmail.com

[1] See Hosios (1990).

[2] The political economy of unemployed benefits was analyzed in a pioneering paper by Wright (1986). Active labor market policy was analyzed from a political economy perspective by Saint-Paul (1998, 2000). Boeri et al. (2012) focus on the arbitrage between unemployment benefits and employment protection.

http://dx.doi.org/10.1016/j.rie.2014.11.001
1090-9443/

The former gain directly from the subsidy, and the latter gain from an enhanced outside option in bargaining. On the other hand, more productive workers and job seekers lose from it. They are harmed due to the fall in the job finding rate, which reflects in particular the deterioration in average job seeker quality. Finally, the workers who do not search (or "long term unemployed") only benefit if they are sufficiently close to the extensive margin of searching, that is, sufficiently productive. The least productive long-term unemployed are too far from the extensive margin of job search to benefit from the policy, and suffer from the financial burden of the search subsidy. Consequently, they oppose the policy. Note however that this analysis would be changed if ALMP were explicitly targeted at the least productive unemployed workers. Here, instead, by monitoring job search irrespective of productivity, the policy is implicity targeted at those workers whose productivity level is immediately below the critical search threshold.

This paper is related to the recent literature on labor market policy analysis in the context of frictional models, following Mortensen and Pissarides (1994). This literature has analyzed to some details the effect of unemployment benefits, often in the context of calibrated numerical analysis – see for example Cahuc and Lehmann (2000), Fredriksson and Holmlund (2001), Mortensen and Pissarides (2003), Lehmann and van der Linden (2007), Krusell et al. (2010), Michau (2013) and Coles and Mortensen (2014). The main novelty here is the focus on ALMP and the role played by the extensive margin of job search, which introduces a new externality (see Ortega (2000) for a related effect when search is not directed and workers are heterogeneous). Also, the design of the model allows us to provide analytical results instead of relying on numerical simulations.

The paper is organized as follows. Section 2 spells out the basic framework, which is a standard matching model with heterogeneous worker productivity and a fixed search cost. Section 3 computes the equilibrium. Section 4 compares it with the utilitarian welfare optimum, and proves the first main result of the paper, i.e. that if the Hosios condition holds, the market outcome is associated with a suboptimally low job seeker quality and too much worker search, i.e. too small labor market tightness. Section 5 studies the effect on welfare of active labor market policies and shows that the first best equilibrium can be replicated if the worker bargaining share and the search subsidy are set at their optimal levels that are characterized by a bargaining share higher than the Hosios level and a search tax. Section 6 concludes.

2. The basic framework

Workers differ by their productivity y, and the population distribution of y is given by a density $\psi(y)$ and c.d.f. $\Psi(y)$. At any point in time, unemployed workers may be searching or not searching – in the latter case their utility is equal to zero. We distinguish between u_t, the total number of unemployed workers, and $\overline{u}_t$, those who are actively searching. The matching rate per unit of time is

$$h_t = m(\overline{u}_t, v_t) \tag{1}$$

where v_t is the vacancy rate, that is the ratio between number of vacant jobs and the labor force. As usual, $m(\overline{u}, v)$ is increasing and concave in both arguments and satisfies constant returns to scale. The labor market tightness parameter θ is defined as $\theta = v/\overline{u}$. and the vacancy filling rate is denoted by $q(\theta) = m(1/\theta, 1)$. The job finding rate is $p = h/\overline{u} = m(\overline{u}, v)/\overline{u} = m(1, \theta) = p(\theta)$ with $p' > 0$ and $p'' < 0$, therefore we can re-express it as $p(\theta) = \theta q(\theta)$.

In order to be searching, workers must incur a unit cost equal to d per unit of time. In order to recruit, firms must post-vacancies at a cost c per unit of time. There is a constant job loss rate equal to s. The wage of a worker of type y is denoted by $w(y)$. Finally, the interest rate is r.

The value functions for being employed V_e, unemployed V_u and the value of a filled job J depend on the worker's type and their valuation equations satisfy the following equations in steady state:

$$rV_e(y) = w(y) + s(V_u(y) - V_e(y)), \tag{2}$$

$$rV_u(y) = -d + \theta q(\theta)(V_e(y) - V_u(y)), \tag{3}$$

$$rJ(y) = y - w(y) - sJ(y), \tag{4}$$

Moreover, the expected value of a vacant job $E[V_v(y)]$ must satisfy $rE[V_v(y)] = -c + q(\theta)(E[J(y)] - E[V_v(y)])$, where the expectations are taken with respect to the pool of job applicants to be determined below. Free entry of vacancies implies $E[V_v(y)] = 0$ and therefore

$$E[J(y)] = \frac{c}{q(\theta)}$$

which shows that the expected value of a job is equal to the average recruiting cost per job. If this did not hold, there would be entry or exit of vacancies, and the process would continue until the equality is restored.

Wages are set by a standard Nash bargaining process with a fraction φ of the net surplus going to the worker. At each date wages for workers of productivity y are set so as to maximize $J(y)^{1-\varphi}(V_e(y) - V_u(y))^{\varphi}$ where for any increase in wages $\Delta w(y)$ we have $\Delta V_e(y) = \Delta w(y) = -\Delta J(y)$. This implies the following equilibrium relationship:

$$V_e(y) = V_u(y) + \frac{\varphi}{1-\varphi} J(y). \tag{5}$$