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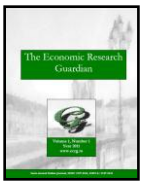

BRIEF REMARK ON "JOB CREATION, JOB DESTRUCTION AND GROWTH …"

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Abstract
This very brief note improves the paper by Lisi (2012) by removing from the model an unrealistic feature.

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JEL classification: J64, O4, O40

1. Introduction

The paper by Lisi (2012) is motivated by the absence of consensus in the literature regarding the sign of the relationship between growth and unemployment (see the quoted paper and the references therein).The main contribution of that work is that the opposite results found in the literature are interpreted within a basic labour market matching model where the net effect of productivity growth on unemployment depends on both the level of matching frictions and the share of (un)employed workers present in the market.

In that model, however, a quite intuitive result (the positive effect of growth on employment) also depends on an unrealistic feature (the share of unemployed workers is higher than the share of employed workers).

This very brief note will show that it is straightforward to remove from the model this drawback. Indeed, the model becomes more realistic and even simpler, since the net effect of growth on unemployment only depends on the key variable of matching models, namely market tightness.

2. The model

We start by introducing the key equations of the model under consideration:

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$$\theta = f\left(\frac{p-w}{c\cdot(r+\delta(g)-g)}\right) \quad (1)$$

$$y = n + g \quad (2)$$

$$\dot{N} = \gamma(\theta)\cdot(1-N) - \delta(g)\cdot N \xrightarrow{yields} n = \gamma(\theta)\cdot\frac{(1-N)}{N} - \delta(g) \quad (3)$$

where θ is the so-called measure of "market tightness"; p is the labour productivity; w is the wage rate; c is the start-up cost; r is the discount rate; g is the exogenous technological progress (exogenous labour-augmenting technological progress); $\delta(g)$ is the job destruction rate (that is higher at faster rates of technological progress, i.e. $\frac{\partial\delta(g)}{\partial g} > 0$); $y \equiv \frac{\dot{Y}}{Y}$ is the output growth rate (Y is the output); $n \equiv \frac{\dot{N}}{N}$ is the growth rate of jobs; $\dot{N}$ is the evolution of employment over the course of time; N is the share of employed workers (the labour force is normalised to the unit, thus $1-N$ is the share of unemployed workers);[1] $\gamma(\theta)$ is the probability of finding a job (that is increasing in market tightness, i.e. $\frac{\partial\gamma(\theta)}{\partial\theta} > 0$).
It follows that:

- In steady state ($\dot{N} = 0 \xrightarrow{yields} n = 0$) the economy grows at the rate of technological progress, i.e. equation (2) becomes $y = g$. However, an increase in g has an ambiguous effect on market tightness and thus on (un)employment, as it is clear from equation (1).
- Out-of-steady-state dynamics, the growth rate of output also depends on the growth rate of jobs.

The growth rate of jobs, n, depends positively on market tightness – i.e. $\frac{\partial n}{\partial\theta} > 0$, as it is clear from equation (3) – but its relationship with the technological progress is still ambiguous, since g has an ambiguous effect on market tightness. However, it can be shown that the net effect of growth on employment crucially depends on the level of matching frictions in the labour market. Indeed:

- If market tightness is very low, namely $lim_{\theta\to 0}\,\gamma(\theta) = 0$, the effect of the rate of technological progress on jobs growth rate is negative, since the negative effect of the job destruction rate on n prevails. Thus, in this case, there is a negative correlation between growth and employment (i.e. a positive correlation between growth and unemployment).
- Instead, if market tightness is very high, namely $lim_{\theta\to\infty}\,\gamma(\theta) = \infty$, the negative effect of $\delta(g)$ on jobs growth rate becomes negligible (n is anyway high). This implies that the positive effect of g on market tightness prevails on the negative one, since $\frac{\partial n}{\partial\theta} > 0$, and thus a positive correlation between growth and employment emerges in the model. Hence, there is a negative correlation between growth and unemployment.

[1] Since each firm has only one job, N also represents the number of firms/jobs of this economy.

References

Lisi G (2012). Job Creation, Job Destruction and Growth: A Comment. *The Economic Research Guardian*. 2(2): 251-255.