

# Unemployment dynamics in the Greek crisis

Franciscos Koutentakis

Department of Economics

University of Crete

[f.koutentakis@uoc.gr](mailto:f.koutentakis@uoc.gr)

## Abstract

This short empirical paper examines the unemployment dynamics in Greece both in the long run and during the current crisis. Using monthly data from 2001 until 2012 it finds that unemployment fluctuations were predominantly driven by the job finding rate. Nevertheless, during the current unemployment boom, the contribution of the separation rate has increased, indicating that the recent reforms relaxing Employment Protection Legislation (EPL) have amplified the unemployment response to the recession.

## 1. Introduction

Since 2009 Greece is experiencing a major economic crisis. The most dramatic impact can be witnessed in the labour market where the unemployment rate from 7.7% in 2008 jumped to 17.7% in 2011 and 24.3% in 2012. This sharp unemployment increase is the obvious consequence of the severe recession, evidently magnified by the extreme fiscal contraction policies followed since 2010, when Greece entered the bailout mechanism. The latter was conditional upon the implementation of an economic adjustment programme, supervised by EC-ECB-IMF, a.k.a. the troika.

Fiscal austerity has been accompanied by a strategy of “internal devaluation”, i.e. an induced fall in the general price level that could replicate the effects of external devaluation through the real exchange rate. To this end, a series of structural reforms have been introduced, focusing almost exclusively on labour market institutions. Among them, the relaxation of employment protection legislation (EPL) has received a great deal of attention.

EPL in Greece is perceived as rather strict with the OECD indices, most notably for white collar workers (Venn, 2009). There were three major laws relaxing EPL dictated by the adjustment program: Law 3863 (July 2010) that reduced the notification period before dismissal and increased the collective dismissals ceiling, Law 3899 (December 2010) that increased the probation period (without eligibility for dismissal compensation) from two months to one year, and the most recent law, 4093 (November 2012) that reduced further the notification period and imposed a ceiling of 12 monthly wages for compensations above 16 years of employment.

The purpose of this paper is to offer a first evaluation of the recent EPL reforms in terms of their impact on unemployment. To this aim, it explores the underlying dynamics behind the unemployment rate, i.e. the job finding and separation rates and

quantifies their contributions to the evolution of the steady state unemployment rate. Then, it compares these contributions for the whole period 2001-2012 with those during the recent crisis, before and after the implementation of EPL reforms.

## 2. Methodology

The methodology is quite straightforward. We use monthly data on hires, dismissals and voluntary quits taken from the State Employment Agency ([Organisation for Employment of the Labour Force, OAED](#)). These are combined with data on employment and unemployment from the [Eurostat](#) Labour Force Survey. Hires, dismissals and quits concern only dependent employment. Since LFS data on dependent employment are available only quarterly, we assume that the rate of dependent employment does not change during the quarter, and multiply total monthly employment and unemployment<sup>1</sup> by the dependent rate of the respective quarter.

The above data allow the calculation of monthly job finding (F) and separation (S) probabilities with the formulas

$$F_t = \frac{H_t}{U_t}$$

$$S_t = \frac{D_t + Q_t}{N_t}$$

With  $H, D, Q$  denoting the flow variables, hires, dismissals and quits, respectively and  $U, N$  denoting the stock variables, unemployment and employment, respectively.

The associated Poisson arrival rates that capture the average number of jobs found or left in the respective month are derived from the above probabilities with the formulas

$$f_t = -\log(1 - F_t)$$

and

$$s_t = -\log(1 - S_t)$$

Assuming that the labour force is constant, the steady state unemployment rate is given by the standard expression

$$u_t^{ss} = \frac{s_t}{s_t + f_t} \quad (1)$$

The steady state unemployment is the rate where unemployment would stabilise if the flow rates of the particular month were maintained indefinitely and had not been any transitions into or out from the labour force. Evidently, it is not equal to the actual unemployment rate, though their fluctuations are highly correlated (correlation coefficient 0.89).

---

<sup>1</sup> In other words we assume that only a fraction of the unemployed is searching for dependent employment.

The next step is the decomposition of unemployment fluctuations to those attributed to changes in the job finding rate and those attributed to changes in the separation rate. Following Elsby, Michaels and Solon (2009) we log-differentiate the steady state unemployment rate in equation (1) above to obtain

$$du_t^{ss} = u_t^{ss}(1 - u_t^{ss})(d \log s_t - d \log f_t) \equiv du_t^f + du_t^s \quad (2)$$

Where  $du_t^f = -u_t^{ss}(1 - u_t^{ss})d \log f_t$  and  $du_t^s = u_t^{ss}(1 - u_t^{ss})d \log s_t$ . Equation (2) decomposes the change of the (steady state) unemployment rate into the respective logarithmic changes of the flow rates with an equal weight.

To quantify the contributions of each flow rate, we follow Fujita and Ramey (2009) who calculate the proportion of the variance of  $du_t^{ss}$  that is explained by its covariance with  $du_t^f$  and  $du_t^s$ :

$$\beta^f = \frac{\text{Cov}(du_t^{ss}, du_t^f)}{\text{Var}(du_t^{ss})} \quad (3)$$

$$\beta^s = \frac{\text{Cov}(du_t^{ss}, du_t^s)}{\text{Var}(du_t^{ss})} \quad (4)$$

In the above expressions,  $\beta^f$  is the proportion of unemployment fluctuations deriving from fluctuations of the job finding rate, and  $\beta^s$  is the proportion deriving from fluctuations of the separation rate. The sum  $\beta^f + \beta^s$  should equal to unity; this holds approximately in our results.

### 3. Results

Table 1, reports the estimated contribution of each flow rate to the evolution of the steady state unemployment rate. For the whole period 2001 to 2012 the contributions of the job finding and separation rates were approximately 75/25, that is for every percentage point of change of the unemployment rate, about 0.75 points reflected change of the job finding rate and the remaining 0.25 points reflected change of the separation rate. The important conclusion is that the job finding rate is the crucial driver of the unemployment rate in the long run.

However, the short run contributions may differ from the long run. To further investigate this issue we narrow the time period and estimate the contributions of the flow rates during the current unemployment increase, namely the four years 2009-2012. Interestingly, the contributions have shifted to 60/40, suggesting a higher importance of the separation rate. The falling job finding rate is still the predominant factor behind the unemployment boom, though in a lesser extend compared to the long run picture.

**Table 1**  
**Contributions of the flow rates to unemployment**

	2001-2012	2009-2012	2009-2010	2011-2012
	Long Run	Recession	Strict EPL	Weak EPL
Job finding	0.77	0.60	0.92	0.50
Separation	0.26	0.42	0.08	0.50

Attempting to examine the potential effect of EPL reforms, we repeat the same estimations for the periods 2009-2010, when the standard regime was in place, “strict EPL” and 2011-2012, when the reforms were put into effect, “weak EPL”. While for the first two years the contributions are around 90/10, for the more recent period they stand to 50/50. The relaxation of EPL has increased the contribution of job separations to the fluctuations of unemployment.

#### **4. Discussion and conclusions**

Our results offered an account of the dynamics behind the evolution of the unemployment rate in Greece focusing on the recent crisis. The current recession was primarily expressed in a substantial decrease of hiring by firms, resulting in rapid unemployment rise. We verified that the fluctuations of the job finding rate are the predominant factor behind the fluctuations of the unemployment rate. This holds both in the long run account as well as in the recent unemployment boom. However, we identified an increase in the contribution of the separation rate after the relaxation of EPL. In fact, firing became more responsive to the recession and unemployment more responsive to separations. This implies that the particular reform amplified the unemployment cost of the recession.

This is not a surprising outcome and we can safely assume that policy makers could reasonably anticipate it. But the motivation behind their decision to press forward the particular reforms looks puzzling. Why would they apply policies that reinforce the unemployment boom?

One possible explanation is that EPL relaxation could trigger high job creation rates when the recovery arrived. Theoretically, one may argue whether or not EPL is relevant in the fight against unemployment: weak EPL favours firings in the recession and hirings in the expansion, without strong evidence concerning the effect on the average unemployment rate (Lazear, 1990; Bertola, 1990; OECD, 2004). The rationale for EPL relaxation stands on boosting hiring in the expansion period. Even if one accepts this rationale, it would be appropriate to wait for signs of recovery before applying the reforms. The timing of relaxation is hardly legitimized. In a recession period as severe as the one experiencing Greece at the moment, it is most likely that relaxing EPL would bring acceleration to the firing rates and exaggerate the unemployment boom.

A more rational explanation is that EPL relaxation fits well with the overall internal devaluation programme. In theory, the recession alone could trigger wage deflation with unemployment rising at a rate sufficient to induce workers bidding for jobs. This mechanism works, provided that counteracting institutional arrangements are not in place. But EPL is by construction an institution that mitigates the impact of recession on unemployment. Its relaxation can be interpreted as a deliberate attempt to accelerate the unemployment boom and speed up the overall adjustment process. From the point of view of internal devaluation it is more consistent to overshoot unemployment rather than moderate it.

### **Acknowledgements**

I have benefited from comments by the participants at the conference “Greek Labour Market in Crisis” organised by the Bank of Greece in November 2012. Any remaining errors are my own.

### **References**

- Bertola, Giuseppe (1990) “Job security, employment and wages” [European Economic Review, 34:4, 851–879](#)
- Elsby, Michael, Ryan Michaels, and Gary Solon, (2009) "The Ins and Outs of Cyclical Unemployment" [American Economic Journal: Macroeconomics, 1:1; 84–110.](#)
- Fujita Shigeru and Garey Ramey (2009) “The Cyclicity of Separation and Job Finding Rates”, [International Economic Review, 50:2; 415-430](#)
- Lazear, Edward P. (1990) “Job Security Provisions and Employment”, [The Quarterly Journal of Economics 105:3; 699-726](#)
- OECD (2004) Employment Outlook, Ch. 2, [Employment Protection Regulation and Labour Market Performance](#)
- Venn, Danielle (2009), “Legislation, collective bargaining and enforcement: Updating the OECD employment protection indicators”, [OECD WP 89](#)