

**Sergio Destefanis**  
*CELPE, CSEF - Università di Salerno*

**Giuseppe Mastromatteo**  
*Istituto di Economia e Finanza - Università Cattolica di Milano*

## **More Jobs? A panel analysis of the European Employment Strategy**

### Abstract:

In this paper we assess the effectiveness of the European Employment Strategy in creating employment over the last decade. We examine long-run trends in aggregate, female and aged employment rates through a difference-in-difference approach over a sample of 24 OECD countries from 1994 to 2009. We find that the European Employment Strategy has added little to employment growth, but for the aged. On the other hand, complying with OECD policy recommendations affected employment performance favourably.

### 1. Introduction

In March 2000, the European Council met in Lisbon with a view to adopt a ten-year programme (the Lisbon Strategy) aimed at revitalising growth and labour-market performance across the EU. Urging member states to take action following the newly established European Employment Strategy guidelines, the Lisbon Strategy set some specific targets by 2010:

- a) an overall employment rate of 70%,
- b) a female employment rate over 60%,
- c) an employment rate of 50% among older workers (aged 55 to 64),
- d) an annual growth rate of 3%.

In early 2005 the European Commission proceeded to assess the first five years of the Lisbon Strategy, finding a rather bleak picture. The Commission responded by relaunching a streamlined Strategy, under the label of “more and better jobs”, through stronger involvement of stakeholders and more rigorous focus on labour-market performance. As of 2008, only the female employment rate was any close to the Lisbon target.

In assessing the Strategy, however, one should not neglect either the decisive enlargement of the EU in the last decade, or the general evolution of economic conditions. In this paper we appraise whether the Lisbon Strategy had any impact on the employment performance of EU member countries (we do *not* deal with growth), focusing on a subset of countries already belonging to the EU in 2000, and contrasting them with a broadly comparable group of OECD countries. We allow for general economic conditions through a generalised difference-in-difference approach. We deal with long-run employment trends, leaving the current crisis, which in our opinion has very little to do with labour-market structures and institutions, out of the picture.

## 2. The Empirical Set-Up

To attack the well-known problems of sample selection and variable omission besetting policy evaluation exercises, we rely on a difference-in-difference approach, using a control group highly comparable with the treated group. The approach basic equation is:

$$(1) \Delta r_{it} = a_0 + a_1 \text{POLICY} + a_2 \text{POST} + a_3 \text{POLICY*POST} + e_{it}$$

where  $\Delta r_{it}$  stands for the outcome variable (here the change of employment rate of country  $i$  in period  $t$ ), POLICY for a binary variable equal to one for countries included in the policy, capturing systematic differences included and non-included countries, POST for a binary variable for the policy-on period, picking up systematic differences across time periods. The coefficient of interest is  $a_3$ , signifying the impact of being among the treated *after* the treatment.

In our exercise, we use 1994-2009 data from the OECD and AMECO for 24 OECD countries (EU: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, UK; non-EU: Australia, Canada, Iceland, Japan, Korea, Norway, New Zealand, Switzerland, USA).

Following Wooldridge (2002, p. 278) we adopt a two-way fixed-effect generalisation of (1), with individual fixed effects giving a more flexible specification of persistent individual characteristics (possibly related to policy inclusion) and time-period dummies. We also distinguish two policy-on periods (2000-2004 and 2005-2009, before and after the Strategy reassessment). Finally, we allow for a vector of time-varying country variables,  $Z_{jit}$ , measuring a variety of institutional and structural changes:

$$(2) \Delta r_{it} = a_i + a_t + a_{31} \text{POLICY*POST}_1 + a_{32} \text{POLICY*POST}_2 + a_j Z_{jit} + e_{it}$$

Indicators of institutional change include first of all the follow-through index computed by Brandt et al. (2005) for the 1994-1999 and the 1999-2004 periods. This indicator, measuring the compliance with labour-market policy recommendations from the OECD, is supposed to affect employment performance with a 4-5 year lag, implying that a comparable measure of policy changes had to be reconstructed for the pre-1994 period. In order to do this, we utilised the measure of compliance with labour-market recommendations calculated in OECD (1998) and normalised both this and the Brandt et al. variable through their respective standard errors.

We believe that evidence about this follow-through index, as opposed to more direct measures of policies and institutions, is important for the following reasons:

a) the index is computed by the OECD itself, in the course of its 2005-2006 Jobs Strategy reassessment. Hence, it is the OECD own measure of institutional change;

b) more direct measures (for which there is already abundant, if somewhat inconclusive, evidence) may have data and specification problems. An important problem, which should be here much attenuated by the 4-5 year lag,

is endogeneity;

c) lacking corresponding measures calculated by European institutions, the OECD index provides an adequate measure of country-specific implementation of the European Employment Strategy (Casey, 2004).

The availability of the follow-through index only for five-year periods and the importance of the 4-5 year policy lag suggests to take changes over 1994-1999, 1999-2004 and 2004-2009 as the time units of observation. This also allows, at the price of a small approximation, to deal straightforwardly with the possible existence of a break in the Lisbon Strategy around 2005.

Due to our focus on long-term employment performance, outcome variables are changes in either the trend (aggregate) employment rate calculated by the OECD, or in other target trend rates computed through the Extended Exponential Smoothing technique suggested in Mohr (2005), which has better end-of-sample properties than the Hodrick-Prescott filter. Abstracting from cyclical fluctuations should also make our equations less affected by unobserved heterogeneity (see Bassanini and Duval, 2006, pp. 120-121).

We also consider five-year changes for some widely available variables: an OECD indicator of product market regulation (the extent of entry barriers in non-manufacturing sectors), and some structural changes, not wholly amenable to policy: the change in the share of construction or service workers over total employment, and in the share of female, or aged, over total labour force.

### 3. The Results

Our empirical framework was applied to two series for the aggregate trend employment rate (one from OECD, the other calculated from AMECO data), and to trend female and aged employment rates. We thoroughly investigated the existence of outliers through the procedure recently suggested in Verardi and Croux (2009). Only Greece 1999-2004 (the year of the Athens' Olympic games) turned out consistently as an outlier, and is not included in the reported estimates (this exclusion is of no import as far the significance of the policy variables is concerned, although it considerably affects significance of the change in the female labour force share). The presented results always relate to first-differenced OLS specifications, which invariably performed much better than LSDV serial correlation-wise. Ramsey's RESET and Wooldridge tests were also used to assess specification issues.

Our main results are shown in Table 1. We do not present results including changes in the share of construction or service workers, or in the aged labour force share, because these shocks never turned out to be significant. The inescapable conclusion from Table 1 is that there is little value for employment growth in the Lisbon Strategy (but, partially, for the aged). Also, if anything, the Strategy loses strength after 2005. There is even less in the Strategy if allowance is made for the OECD policy follow-through indicator and the change of the female labour force share. On the other hand, the latter variables (which are virtually orthogonal) matter.

Column "4" in Table 1 provides some robustness analysis. If one allows for a different effect of the follow-through indicator in the period where it was actually computed by Brandt et al., there is some evidence of a larger

effectiveness for it, but virtually nothing changes as far as the Strategy is concerned.

The above insights are confirmed by Table 2, where we present results for the Euro Zone (including Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain) versus the other countries. This is done on the ground that belonging to the Euro Zone may help labour-market reforms conducive to higher performance (Alesina et al., 2008). Our evidence is however that Euro countries behaved little differently from the other EU countries, and that certainly the Lisbon Strategy was not more effective among them.

#### 4. Concluding Remarks

We assessed the employment performance of the Lisbon Strategy through a difference-in-difference approach over a sample of 24 OECD countries from 1994 to 2009. We find that the Strategy has added little to employment growth, but for the aged, and that it actually *looses* strength after 2005. On the other hand, complying with OECD policy recommendations has a favourable impact on employment performance. Furthermore, countries where the female share of labour force has been increasing have also performed better employment-wise. Belonging to the Euro Zone has virtually no differential effect.

#### References

- Alesina A.F., Ardagna S., Galasso V. (2008), The Euro and Structural Reforms, NBER WP 14479.
- Bassanini A., Duval R. (2006), Employment patterns in OECD countries: reassessing the role of policies and institutions, Economics Department WP 486. OECD, Paris.
- Brandt N., Burniaux J.-M., Duval R. (2005), Assessing the OECD Jobs Strategy: Past Developments and Reforms, Economics Department WP 429. OECD, Paris.
- Casey B.H. (2004), The OECD Jobs Strategy and the European Employment Strategy: two views of the labour market and of the welfare state, European Journal of Industrial Relations, 10(3), 329-352.
- Mohr M. (2005), A Trend-Cycle(-Season) Filter, WP 196, European Central Bank, Frankfurt.
- OECD (1998), The OECD Jobs Strategy: Progress Report on Implementation of Country-Specific Recommendations, Economics Department WP 196, OECD, Paris.
- Verardi V., Croux C. (2009), Robust regression in Stata, Stata Journal, 9(3), 439-453.
- Wooldridge J.M. (2002), Econometric Analysis of Cross Section and Panel Data, MIT Press, Cambridge MA

## Legend of the equations

All equations are OLS on first-differenced variables and include time-unit dummies (not reported). *Adj. R<sup>2</sup>* is the coefficient of determination adjusted for degrees of freedom, *Reset* is Ramsey's RESET test, *Wooldridge* is Wooldridge strict exogeneity test (p-values are reported for both these tests). The significance levels of reported coefficients are based on robust standard errors: \*, \*\*, \*\*\* denote respectively significance at 10, 5, 1%.

Table 1 – Policy on for EU countries

	“1”	“2”	“3”	“4”
$\Delta$ Empl. Rate (OECD)				
POLICY*POST <sub>1</sub>	0.36	0.38	0.29	0.25
POLICY*POST <sub>2</sub>	-0.13	-0.08	-0.52	-0.36
$\Delta$ Female l.f. sh.		1.28***	1.34***	1.36***
$\Delta$ Entry barriers			-0.12	-0.12
Follow-through			0.26***	0.18
Follow-through* POST				0.15
Follow-through* POLICY*POST				-0.04
<i>Adj. R<sup>2</sup></i>	<i>0.17</i>	<i>0.48</i>	<i>0.5</i>	<i>0.52</i>
<i>Reset</i>		<i>0.59</i>	<i>0.61</i>	
<i>Wooldridge</i>		<i>0.1</i>	<i>0.95</i>	
$\Delta$ Empl. Rate (AMECO)				
POLICY*POST <sub>1</sub>	-0.12	-0.06	0.05	-0.27
POLICY*POST <sub>2</sub>	-1.63*	-1.56*	-1.57*	-1.89**
$\Delta$ Female l.f. sh.		0.83**	0.82***	0.96***
$\Delta$ Entry barriers			0.02	0.00
Follow-through			0.55***	0.06
Follow-through* POST				0.67**
Follow-through* POLICY*POST				0.10
<i>Adj. R<sup>2</sup></i>	<i>0.2</i>	<i>0.26</i>	<i>0.38</i>	<i>0.42</i>
<i>Reset</i>		<i>0.14</i>	<i>0.49</i>	
<i>Wooldridge</i>		<i>0.36</i>	<i>0.25</i>	

Table 1 - continuation

	"1"	"2"	"3"	"4"
$\Delta$ Female Empl. Rate				
POLICY*POST <sub>1</sub>	0.69	0.78	0.91	0.66
POLICY*POST <sub>2</sub>	-0.38	-0.28	-0.27	-0.45
$\Delta$ Female l.f. sh.		1.15**	1.15***	1.24***
$\Delta$ Entry barriers			-0.06	-0.08
Follow-through			0.42***	0.09
Follow-through* POST				0.38
Follow-through* POLICY*POST				0.16
<i>Adj. R<sup>2</sup></i>	<i>0.15</i>	<i>0.32</i>	<i>0.4</i>	<i>0.41</i>
<i>Reset</i>		<i>0.05</i>	<i>0.36</i>	
<i>Wooldridge</i>		<i>0.11</i>	<i>0.13</i>	
$\Delta$ Aged Empl. Rate				
POLICY*POST <sub>1</sub>	2.86**	2.85**	3.11**	2.75*
POLICY*POST <sub>2</sub>	1.87	1.87	1.89	1.38
$\Delta$ Female l.f. sh.		-0.11	-0.13	0.05
$\Delta$ Entry barriers			-0.09	-0.09
Follow-through			0.78**	0.12
Follow-through* POST				1.05
Follow-through* POLICY*POST				-0.11
<i>Adj. R<sup>2</sup></i>	<i>0.13</i>	<i>0.11</i>	<i>0.24</i>	<i>0.26</i>
<i>Reset</i>		<i>0.05</i>	<i>0.56</i>	
<i>Wooldridge</i>		<i>0.05</i>	<i>0.07</i>	

Table 2 – Policy on for Euro Zone countries

	"1"	"2"	"3"	"4"
$\Delta$ Empl. Rate (OECD)				
POLICY*POST <sub>1</sub>	0.24	0.37	0.18	0.01
POLICY*POST <sub>2</sub>	-0.35	-0.21	-0.47	-0.51
$\Delta$ Female l.f. sh.		1.29***	1.35***	1.39***
$\Delta$ Entry barriers			-0.14	-0.18
Follow-through			0.24**	0.13
Follow-through* POST				0.01
Follow-through* POLICY*POST				0.28
<i>Adj. R<sup>2</sup></i>	<i>0.19</i>	<i>0.49</i>	<i>0.52</i>	<i>0.51</i>
<i>Reset</i>		<i>0.76</i>	<i>0.81</i>	
<i>Wooldridge</i>		<i>0.36</i>	<i>0.96</i>	
$\Delta$ Empl. Rate (AMECO)				
POLICY*POST <sub>1</sub>	-0.24	-0.12	-0.2	-0.67
POLICY*POST <sub>2</sub>	-1.52	-1.4	-1.4	-1.5
$\Delta$ Female l.f. sh.		0.84***	0.82***	0.98***
$\Delta$ Entry barriers			-0.02	-0.12
Follow-through			0.50***	0.02
Follow-through* POST				0.38
Follow-through* POLICY*POST				0.67*
<i>Adj. R<sup>2</sup></i>	<i>0.18</i>	<i>0.24</i>	<i>0.34</i>	<i>0.39</i>
<i>Reset</i>		<i>0.12</i>	<i>0.65</i>	
<i>Wooldridge</i>		<i>0.43</i>	<i>0.32</i>	



Table 2 – continuation

	"1"	"2"	"3"	"4"
$\Delta$ Female Empl. Rate				
POLICY*POST <sub>1</sub>	0.32	0.49	0.41	0.17
POLICY*POST <sub>2</sub>	-0.9	-0.73	-0.81	-0.87
$\Delta$ Female l.f. sh.		1.16***	1.16***	1.46***
$\Delta$ Entry barriers			-0.09	-0.14
Follow-through			0.37**	0.02
Follow-through* POST				0.36
Follow-through* POLICY*POST				0.31
<i>Adj. R<sup>2</sup></i>	<i>0.15</i>	<i>0.33</i>	<i>0.38</i>	<i>0.39</i>
<i>Reset</i>		<i>0.22</i>	<i>0.28</i>	
<i>Wooldridge</i>		<i>0.12</i>	<i>0.13</i>	
$\Delta$ Aged Empl. Rate				
POLICY*POST <sub>1</sub>	2.45**	2.46**	2.31*	2.01
POLICY*POST <sub>2</sub>	1.16	1.16	1.14	1.03
$\Delta$ Female l.f. sh.		-0.06	-0.08	0.15
$\Delta$ Entry barriers			-0.05	-0.1
Follow-through			0.71*	-0.11
Follow-through* POST				1.05*
Follow-through* POLICY*POST				0.30
<i>Adj. R<sup>2</sup></i>	<i>0.11</i>	<i>0.09</i>	<i>0.18</i>	<i>0.22</i>
<i>Reset</i>		<i>0.27</i>	<i>0.12</i>	
<i>Wooldridge</i>		<i>0.33</i>	<i>0.23</i>	