

# Unemployment Risk in Southern Greece

Stavros Rodokanakis

*The basic aim of this paper is to investigate the impact that educational level of individuals and participation in training programmes have on their job prospects in Southern Greece (namely the regions of Southern Aegean and Crete) during the implementation of the first Community Support Framework (1989-1993). We try to see whether the educational level itself and participation in training programmes increased the chances of finding a job. More specifically, we research what are the social and demographic characteristics that increase the chances of someone in the examined population finding a job, how those chances change (if they do) after the introduction of training courses and, also, whether University graduates, in contrast to most of the rest of the EU member states, face greater difficulties in finding a job than non-University graduates, as a series of studies or statistics for Greece conclude. To the author's knowledge, this is the first attempt to analyse individual anonymised records (micro-data) from the Labour Force Survey (LFS) for both employed and unemployed in those two regions at NUTS 2 level.*

*Key words: Spatial econometrics; Labour economics policies; Human capital; Skills; Regional, urban and rural analyses.*

*JEL classification: C21, J08, J24, O18*

## **1. Introduction**

The aim of the paper is to study the impact that education and training programmes (apprenticeship, intra-firm training, continuing vocational training-CVT, popular training) had on the labour market in the Greek regions of Southern Aegean and Crete, during the implementation of the CSF-1 (1989-93). Namely, we try to see whether the educational level itself and participation in training programmes increased the

chances of finding a job. The vocational training programmes of the CSF-1 in the regions under examination started in March 1990 and ended in March 1994. All training actions in Greece are co-financed by the EU funds, whereas during the examined time period both regions belonged to the Objective 1 of the EU Structural Funds. The total population of the above two regions constitute 8.3% of Greece's total.

We work first at regional level, and second at urban, semi-urban and rural level.

The main questions to be answered are:

- (i) What are the social and demographic characteristics that increase the chances of someone in the examined population finding a job?
- (ii) How does the participation in training courses affect the chances of getting an employment?
- (iii) Whether University graduates, in contrast to most of the rest of the EU member states, face greater difficulties in finding a job than the non-University graduates, as a series of studies (see Meghir *et al.*, 1989; OECD, 1990; Iliades, 1995; IN.E./GSEE-ADEDY, 1999; Katsikas, 2005) or statistics (Eurostat: Education and Employment Prospects, 1995) for Greece conclude.

We test the human capital theory, which underpins many of the important developments in modern economics and provides one of the main explanations for wage and salary differentials by age and occupation, and the uneven incidence of unemployment by skill (education and training). Following Becker's (1964) analysis on the economic role of human capital, particularly education (2<sup>nd</sup> ed., 1975), there is now a considerable amount of empirical research on the closely related topics of education and skills (see Prais, 1995; Murray and Steedman, 1998) and, more specifically, the increasing role of skilled labour in the economy (Berman *et al.*, 1994; Machin, 1996; Green *et al.*, 1998; Machin and van Reenen, 1998).

The importance of this research lies in the fact that, to the author's knowledge, it is the first time that the analysis of investigating the impact of training on the Greek labour market – and specifically on the Regions of Southern Aegean and Crete – is based on the micro-data of the Greek LFS. This is because access to the individual anonymised records of the Greek LFS was not allowed to researchers until the summer of 2005, due to the Data Protection Act.

The article starts with the issue of over-education and why it is important to this research. Then, we examine the impact of training programmes on the employment prospects of individuals in the EU and the rest of the OECD according to a series of studies; the results are based on both cross-sectional and longitudinal data. Finally, we refer to the socio-economic characteristics of the examined areas and perform a logistic regression for the years 1988 and 1992 - based on micro-data of the Greek LFS - for the two regions under study and compare them with the entire country. The article concludes with the impact of training on employment probability in Europe and the examined areas, and ends with some general comments on the merit and value of this study.

## **2. Why is over-education important to this research?**

According to the OECD (1990, p. 67, Table 2.3), in Greece - contrary to what happens in many other European countries - the unemployment rate of university graduates was higher than that of the less educated, whilst, mainly since the late 1980s, a lot of graduates of tertiary education, especially of certain old traditional specializations, faced problems of absorption into the labour market (Iliades, 1995). Also, according to Katsikas (2005) the University graduates in Greece face greater difficulties finding a job in comparison to the less educated. Meghir *et al.* (1989) analysed the main determinants of female participation in the labour force and male unemployment duration in Greece using data from the 1981 Greek LFS. An interesting finding is that

male unemployment duration increased with education. Also, according to the study of IN.E./GSEE-ADEDY (1999), based on the processing of ESYE (National Statistical Service of Greece) aggregated data, the probability of an unemployed person becoming long-term unemployed depends on his/her age, gender and family status. Contrary to the common perception, this probability did not depend on the educational level.

Greek farming and especially Greek industry consisted of many pre-eminently small businesses of traditional activities, which did not require administrative and technical staff with higher education and specialization (Kanellopoulos, 1984). Besides, the family character of many Greek businesses made their owners avoid hiring staff (including those with high qualifications) or implementing innovative ideas of high skilled people, with the result that industry was unable to create enough new positions for people with relatively high specialization and to be unable to absorb the increased number of graduates (Kanellopoulos, 1984). Exactly the opposite happened in the public sector, where many new positions were created to absorb unemployed graduates. Although this waiting (queuing for a public sector job) raised the apparent unemployment of graduates (see, for instance, Krueger and Summers, 1987, p. 44), some of them held temporary jobs, often in the concealed economy (Glytsos, 1990). Moreover, the public sector limits its action to essentially bureaucratic competence and activities or to the provision of non-exchangeable services internationally. Greece seems to manifest over-education by any of the criteria mentioned above. The relative remuneration of university graduates was decreasing through time, mainly because of their over-supply (Glytsos, 1990).

For more information on the causes of graduate unemployment see Johnes *et al.*, 1987; Sanyal, 1987; Dolton and Vignoles, 2000.

### **3. Impact of training at micro-economic level**

---

The early European evaluation studies are mostly characterized by the fact that research was not based on longitudinal and non-experimental data, as is the norm in the second generation studies (see section 3.1), but on cross-sectional and (quasi) experimental data. Experimental evaluations are common in the U.S. but scarce in Europe (Bjorklund and Regner, 1996). The micro-economic studies on active labour market policies (ALMPs) were effectively summed up in OECD (1993) and Fay (1996). Regarding training the basic conclusion was a frequently weak return to the training of the unemployed. In the majority of cases the most significant force decreasing the return was dead-weight (i.e. a trained job-hunter is taken on but would have been employed in any case without training) - (Jackman *et al.*, 1996). Heckman *et al.* (1999) and Stanley *et al.* (1999) concluded that if there were any positive treatment effects, concerning ALMP effectiveness in the U.S., then they would be negligible.

### **3.1. Findings from recent European Programme evaluation on training (second generation studies)**

To judge the impact of programmes, the majority of the ALMP studies examine treatment impacts on either employment (unemployment) figures or length of employment (unemployment) or risks. A few studies (Bell *et al.*, 1999; Larsson, 2000; Lechner, 2000; Raaum and Torp, 2002; Regner, 2002) also view earnings as outcome variables worthy of attention. Regarding evaluation techniques, the majority of studies use matching estimators. These try to copy a randomized experiment *ex post* because of a plethora of non-experimental data.

In contrast to the early European evaluation studies, cross-sectional data is hardly to be found and training research in Europe has replaced it with the more useful longitudinal data, allowing for the possibility that impact assessments will be more robust (Kluve and Schmidt, 2002). Namely, the studies of section 3.1 examined the same population groups over time, apart from those of Winter-Ebmer (2006) and

Cueto and Mato (2009) which used only one reference year in their research; also, only one study (that of Malmberg-Heimonen and Vuori, 2005) used experimental data.

These results show that the more expensive programmes having a significant amount of training appear to be most effective at increasing employment prospects (see Kluge *et al.*, 1999; Brodaty *et al.*, 2001; van Ours, 2001; Kluge and Schmidt, 2002; Raaum and Torp, 2002). Lately, national studies do not all find positive impacts (Gerfin and Lechner, 2000; Regner, 2002); but bearing in mind that job creation and subsidies for employment in the public sector usually do not succeed (Kluge *et al.*, 1999; Brodaty *et al.*, 2001), especially if their one aim is to remove unemployed people from the register (Lechner, 2000), training seems to have a significant impact.

Concerning the most recent research (Weber and Hofer, 2003; Centeno *et al.*, 2004 - on earnings as well; Graversen, 2004; Graversen and Jensen, 2004; Hujer *et al.*, 2004; Rosholm and Svarer, 2004; Hogelund and Holm, 2005; Aakvik and Dahl, 2006), there is no impact of training on employment probability in the European labour markets. Also, according to a series of studies (Lechner *et al.*, 2005 - on earnings as well; Malmberg-Heimonen and Vuori, 2005; Steiger, 2005; Lechner *et al.*, 2007 - on earnings as well; Cueto and Mato, 2009 - a locking-in effect of trainees is shown that it may be decreasing labour mobility) the employment effects of training are mixed, namely there are positive and negative results. Furthermore, recent research on Europe has also found that training has positive effects on employment probability, although in some cases more for specific age groups or areas [Cockx, 2003; Hamalainen and Ollikainen, 2004; Leetmaa and Vork, 2004; Albrecht *et al.*, 2005 - for young men on employment effects (research on earnings as well, but no impact on income effects); Arellano, 2005 - higher positive effects for women than for men; Cavaco *et al.*, 2005; Fitzenberger and Speckesser, 2005 - more in West Germany than in East Germany; Kluge *et al.*, 2005; Lorentzen and Dahl, 2005 - but modest effects and only on earnings; Stenberg, 2005; Winter-Ebmer,

2006 - for men and on earnings as well; Mato and Cueto, 2008 - but no effects on earnings].

In conclusion, up-to-date evaluation studies point to minor impacts of European training policies and they are most likely less significant and not always as positive as those responsible for designing them had wished. Although the cross-national figures show a few positive results from programmes, it is impossible to disregard the more negative results. The findings allow us to conclude that training programmes seem to have some positive effects on employment and no effects on earnings. Moreover, effects diminish over time. The negative effects reported by several evaluations can be explained, on the one hand by a locking-in effect, and on the other by the fact that some participants seem to enrol in training merely in order to collect unemployment insurance benefits (Cueto and Mato, 2009). The conclusions based on the recent studies are somewhat similar to those of Heckman *et al.* (1999) and Stanley *et al.* (1999) for the U.S.

#### **4. The Region of Southern Aegean**

The Region of Southern Aegean contains the counties of the Cyclades and the Dodecanese. The per capita GDP was 16,200 euro in 2003 (94% of the EU-25 average, and 116% of the Greek GDP average, second richest region in the country after that of Central Greece). With Ermoupolis, Syros, as its centre, 2.8% of the country's population is concentrated in the region. Between the census of 1991 and 2001 the population rose 17.6%, the highest rise in the country. The famous tourist destinations of Mykonos, Santorini and Rhodes are situated in this region. The region produces 3.2% of the GDP, 3.6% of the agricultural produce, 0.3% of manufacturing and 3.8% of services. Eighty-seven percent of its produce comes from services, with a significant role in tourism, 24% of the gross product accrues from hotels and restaurants, the highest proportion in the country (data of 2003). The region accounts for the second lowest proportion of culti-

vated land in the country with 1.9% (2001). Unemployment in the region rose by half a point in 2001 to 12% of the workforce, the fifth highest rate of unemployment in the country (source: [www.economics.gr](http://www.economics.gr)).

### **5. The Region of Crete**

The Region of Crete contains the counties of Iraklio, Lasithi, Rethymno and Chania. In 2001 the per capita GDP was equal to 67% of the EU-15 average (69% for Greece as a whole), whereas in 2003 the regional GDP per head was 97% of the country's mean (98% in 1995) and 78% of the EU-25 mean (80.9% for the country as a whole). With Iraklio as its centre, 5.5% of the country's population is concentrated in the region with a distinct upward trend, noting that between the census of 1991 and 2001 the region had the second highest rate of population increase (11.3%) nationally after the Southern Aegean. It produces 5.3% of the national GDP, 7.9% of the agricultural produce, 1.3% of manufacturing and 5.9% of services. Seventy-five percent of its produce comes from services, with its significant role in tourism, noting that 15% of its gross product stems from hotels and restaurants (2003). It accounts for 7.5% of cultivated land in the country and 35% of total olive oil production (first in the country in 2001). Unemployment in Crete fell for the third consecutive year by 0.2 units in 2001, to 6.7% of the workforce (10.5% for the whole of Greece), the second lowest proportion nationally (source: [www.economics.gr](http://www.economics.gr)).

### **6. Numbers of records in the LFS samples**

The questionnaire of the European (and Greek) LFS was greatly modified in 1992 (Felstead *et al.*, 1998). The originality of this research is that we use individual anonymised records (micro-data) of the LFS for both employed and unemployed (about 1.5% of the total population of each region).



*Table 1* shows the numbers of records eligible for analysis in the LFS samples of the two regions under examination in 1988 and 1992. Apart from the system missing records, following the limitation of age (15-64 years old) and removing the non-active population, we ended with the following numbers of records eligible for analysis in each region (in the spring, namely from the 14th to 26th week of the year):

**Table 1**

**Numbers of records eligible for analysis in the LFS samples**

<b>Year</b>	<b>Region</b>	<b>No. of records</b>
<b>1988</b>	<b>Southern Aegean</b>	<b>1,224</b>
	Crete	2,726
<b>1992</b>	<b>Southern Aegean</b>	<b>1,244</b>
	Crete	2,462

## **7. The logistic regression based on the micro-data of the Greek LFS**

The basic aim of the econometric analysis is to test the impact that training programmes (apprenticeship, intra-firm training, CVT, popular training) and educational level had on people's job prospects in the Regions of Southern Aegean and Crete, during the implementation of the CSF-1 (1989-93), accounting for demographic characteristics such as age, gender, marital status and area of residence. We try to see whether participation in training programmes and educational level increased the chances of finding a job. In the paper, we use a logistic regression model for studying differences between those that did participate in training programmes and those that did not. Regression models allow for group comparisons adjusting for demographic and

socio-economic variables. It should be noted that regression-adjusted comparisons may still provide misleading results when other important variables that might have an effect are omitted.

The dependent variable takes two possible values (employed versus unemployed). The explanatory variables (six for 1992 and five for 1988) are the participation in training courses (only available in 1992 with five categories including the four types of training completed, as mentioned above, and non-participation in training courses as the reference category), six levels of education, gender, age level (four categories), marital status and residence location (urban areas, semi-urban areas and rural areas).

The effect of demographic variables such as age, gender, marital status, residence location, as well as educational level and participation in training programmes on the employment status, is investigated with a logistic regression model due to the categorical nature of the dependent variable. The logistic regression model is written as:

$$\text{logit } P(y = 1 | x_1, \dots, x_k) = \log \left[ \frac{P(y = 1 | x_1, \dots, x_k)}{1 - P(y = 1 | x_1, \dots, x_k)} \right] = \beta_0 + \sum_{k=1}^K \beta_k x_k$$

where  $P(y = 1 | x_1, \dots, x_k)$  and  $1 - P(y = 1 | x_1, \dots, x_k)$  denote the conditional probability a randomly selected individual to be 'unemployed' and 'employed' respectively. The coefficient  $\beta_k$  denotes the effect that a unit increase in the explanatory variable  $x_k$  has on the log odds of being 'unemployed' than 'employed' controlling for all other variables in the model and  $\beta_0$  is the intercept of the model and the value of the logit when all the explanatory variables take the value zero. More spe-

cifically, a unit increase in the explanatory variable  $x_k$  multiplies the odds by  $e^{\beta_k}$  controlling for all other variables in the model.

Solving the above formula with respect to the conditional probability we have:

$$P(y=1 | x_1, \dots, x_k) = \frac{e^{\beta_0 + \sum_{k=1}^K \beta_k x_k}}{1 + e^{\beta_0 + \sum_{k=1}^K \beta_k x_k}}$$

Due to data limitations, we cannot explore the impact that the duration of courses, thematic fields, number of participants, duration of unemployment period of the trainees have on unemployment. Another limitation of the research is that the data available are cross-sectional rather than longitudinal and therefore we cannot study any population changes across time. The Greek LFS data are non-experimental.

### **7.1. Description of the variables**

We define now the complete list of variables together with their coding values that we use in the model.

#### **Dependent variable**

Employment Status (STA1) (Unemployed = 1, Employed = 0)

#### **Explanatory variables**

The reference category of each variable is underlined.

- 1) Gender (STA 2) (Female = 1, Male = 0)
- 2) Marital status (STA 3) (Married, divorced or widows = 1, Non-married = 0)
- 3) Level of education (STA8A-STA8D)  
STA 8A = University graduates  
STA 8A1 = MSc or PhD holders  
STA 8B = Polytechnic (TEI) graduates  
STA 8C = Lyceum graduates (12 years of schooling) or not finished University  
STA 8C1 = High-school graduates (9 years-compulsory education)  
STA 8D = Primary school graduates or not finished primary school or never in school.
- 4) Urbanization level of settlement system (STA9C-STA9E)  
STA 9C = Urban areas  
STA 9D = Semi-urban areas  
STA 9E = Rural areas
- 5) Participation in the past in training course(s) (STA26A-STA26E)  
STA 26A = apprenticeship  
STA 26B = intra-firm training  
STA 26C = continuing vocational training (CVT)  
STA 26D = popular training  
STA 26E = Non-participation in the past in training course(s)
- 6) Age groups (STA40A-STA40E)  
STA 40A = 15-24 years old

STA 40D = 25-34 years old

STA 40E = 35-44 years old

STA 40C = 45-64 years old

The base (or reference) categories are those with which the rest of the corresponding variables are compared. The reference categories are chosen so as to match the needs of the research.

We have excluded the 14 and 65 year olds in order to avoid including in our analysis those who are younger than 14 and older than 65 years old.

The variable “participation in the past in training course(s)” first appeared in the 1992 questionnaire; it means that the interviewee had completed one or more training courses. This is also an indication of the attitude towards training in Greece at the end of the 1980s. The duration of apprenticeship and intra-firm training had to be at least one year according to the questionnaire of the Greek LFS. The term “popular training” (*laiki epimorphosi* in Greek) means training courses intended mainly for elderly people independently of their educational level, where the curriculum includes largely courses of general knowledge.

## **7.2. Results for Southern Aegean**

*Tables 2 and 3* present the results of the logistic regression in Southern Aegean for 1988 and 1992. In 1988, women, non-married individuals, people in the age group 15-24 years old, people who lived either in the urban areas or semi-urban areas were more likely to be unemployed than men, married people, people in the age between 25 to 64 and those in rural areas. The effect of urbanization level can be explained since in the Greek agrarian sector unemployment was not properly counted.

In addition, for 1992, the variable “gender” is statistically non-significant (perhaps due to the family nature of the tourist companies). Marital status is statistically non-significant as well, whereas people who lived in the urban areas were more likely to be unemployed than in rural areas; living in semi-urban areas was not found statistically significant. Also in 1992, people in the age group 15-24 years old were more likely to be unemployed than people in the age range from 35 to 64 (other differences were not found significant).

Also, for both years, all educational variables are statistically non-significant. Furthermore, in the Region of Southern Aegean, all training variables were found to be statistically non-significant.

### ***7.2.1. Results for Southern Aegean, 1988***

**Table 2**

(parameter estimates  $b_k$ , standard errors (s.e.), p-value, exponent of  $b_k$ )

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	1,069	,286	13,971	1	,000	2,912
Marital status	-,944	,381	6,131	1	,013	,389
Aged 25-34	-,808	,361	5,008	1	,025	,446
Aged 35-44	-1,226	,495	6,142	1	,013	,293
Aged 45-64	-2,251	,631	12,715	1	,000	,105
MSc or PhD holders	-16,584	4,019E4	,000	1	1,000	,000
TEI graduates	-,348	,889	,153	1	,695	,706
12 years of schooling	,424	,522	,659	1	,417	1,527
9 years-compulsory education	,155	,610	,064	1	,800	1,167

Primary school graduates and below	,276	,521	,281	1	,596	1,318
Urban areas	1,576	,430	13,414	1	,000	4,835
Semi-urban areas	1,740	,486	12,800	1	,000	5,697
Constant	-3,393	,654	26,903	1	,000	,034

### 7.2.2. Results for Southern Aegean, 1992

**Table 3**

(parameter estimates  $b_k$ , standard errors (s.e.), p-value, exponent of  $b_k$ )

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	,493	,316	2,441	1	,118	1,637
Marital status	-,393	,435	,817	1	,366	,675
Aged 25-34	-,789	,412	3,659	1	,056	,455
Aged 35-44	-2,239	,667	11,249	1	,001	,107
Aged 45-64	-1,701	,592	8,268	1	,004	,182
TEI graduates	-,549	1,195	,211	1	,646	,577
12 years of schooling	,369	,666	,307	1	,579	1,446
9 years-compulsory education	,604	,700	,746	1	,388	1,830
Primary school graduates and below	,385	,671	,328	1	,567	1,469
Urban areas	1,087	,366	8,818	1	,003	2,966
Semi-urban areas	,907	,484	3,511	1	,061	2,476
Apprenticeship	-17,583	1,279 E4	,000	1	,999	,000
Intra-firm training	-18,711	4,019 E4	,000	1	1,000	,000
CVT	-19,012	1,590 E4	,000	1	,999	,000

Popular training	-18,352	4,019 E4	,000	1	1,000	,000
Constant	-3,160	,741	18,177	1	,000	,042

### 7.3. Results for Crete

*Tables 4 and 5* present the results of the logistic regression in Crete for 1988 and 1992. In both years, women, non-married individuals, people who lived either in the urban areas or semi-urban areas were more likely to be unemployed than men, married people, and those in rural areas. The results are in accordance with the family strategies and the gender roles in traditional Greek families, as well as with the unequal opportunities and discrimination against women by companies. The higher probability of women in relation to men could also be explained by the fact that women often join the labour market earlier in relation to men. Extended family protection, with a view to preparation for entry into the labour market, applies to both sexes, of course. The effect of urbanisation level can be explained since in the Greek agrarian sector unemployment was not properly counted. Also in both years, people in the age group 15-24 years old were more likely to be unemployed than people in the age between 25 to 64.

In addition, for 1988, significant differences have been found only between primary school graduates and university graduates indicating that primary school graduates were less likely to be unemployed than university graduates, whereas all the rest of the educational variables are statistically non-significant in both 1988 and 1992.

Most importantly, none of the four types of training programmes seemed to reduce the odds of unemployment. The same results on training were found for other Greek regions as well (see Rodokanakis and Tryfonidis, 2008; Rodokanakis, 2009; Rodokanakis and Tryfonidis, 2009).



**7.3.1. Results for Crete, 1988****Table 4**(parameter estimates  $b_k$ , standard errors (s.e.), p-value, exponent of  $b_k$ )

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	1,094	,226	23,405	1	,000	2,985
Marital status	-,784	,277	8,045	1	,005	,456
Aged 25-34	-,667	,293	5,173	1	,023	,513
Aged 35-44	-1,088	,382	8,105	1	,004	,337
Aged 45-64	-1,638	,436	14,098	1	,000	,194
MSc or PhD holders	1,333	1,149	1,346	1	,246	3,793
TEI graduates	,693	,395	3,079	1	,079	2,000
12 years of schooling	,362	,332	1,187	1	,276	1,436
9 years-compulsory education	-,682	,488	1,954	1	,162	,505
Primary school graduates and below	-,755	,370	4,161	1	,041	,470
Urban areas	1,379	,313	19,429	1	,000	3,970
Semi-urban areas	1,057	,392	7,265	1	,007	2,878
Constant	-3,173	,446	50,725	1	,000	,042

**7.3.2. Results for Crete, 1992****Table 5**

(parameter estimates  $b_k$ , standard errors (s.e.), p-value, exponent of  $b_k$ )

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	1,248	,238	27,607	1	,000	3,485
Marital status	-,861	,325	7,037	1	,008	,423
Aged 25-34	-1,847	,320	33,393	1	,000	,158
Aged 35-44	-1,801	,417	18,671	1	,000	,165
Aged 45-64	-2,424	,485	24,999	1	,000	,089
MSc or PhD holders	-16,822	1,784E4	,000	1	,999	,000
TEI graduates	,774	,527	2,154	1	,142	2,168
12 years of schooling	,368	,436	,714	1	,398	1,445
9 years-compulsory education	,202	,495	,166	1	,683	1,224
Primary school graduates and below	-,299	,457	,428	1	,513	,741
Urban areas	1,693	,330	26,240	1	,000	5,434
Semi-urban areas	1,095	,436	6,311	1	,012	2,988
Apprenticeship	-19,156	1,041E4	,000	1	,999	,000
Intra-firm training	-16,762	2,835E4	,000	1	1,000	,000
CVT	1,210	1,665	,528	1	,467	3,354
Popular training	-19,082	2,842E4	,000	1	,999	,000
Constant	-3,070	,539	32,419	1	,000	,046

#### 7.4. Interaction effect among variables

Only for the 1992 sample, did we fit the interaction effects between training and urbanisation level, and between training and level of education. Interactions terms were not found to be statistically significant in either region. Therefore, the variable “training” does not alter the relationship between unemployment and education, as well as unemployment and urbanisation level. In other words, the chances of finding a job do not change when we count training as an additional qualification in relation to residence location and level of education.

## **8. Conclusions**

A significant number of researchers making use of accessible data and studies to examine the potential impacts of training on employment have been referred to. In spite of being restricted to only a small number of nations, micro-economic studies of effect evaluations indicate that some programmes have managed to noticeably better employment prospects for those taking part. On the other hand, the findings include a number of programmes which appear to have had almost no effect.

Programmes with fairly specific targeting have managed positive results and this may be due to the fact that these programmes usually take account of individual requirements. However, a number of programmes that were most widely targeted have had little impact. Lastly, to establish the ways in which programmes can be made better more research is necessary.

According to the findings of the logistic regression for Southern Aegean and Crete, the results for gender, marital status and residence location are mixed. On the contrary, regarding age groups the findings are common and clear apart from one case in Southern Aegean.

The level of education is statistically non-significant for 1988 and 1992 in both regions, apart from primary school graduates in Crete in 1988 who were less likely to be unemployed than university graduates. All training variables are statistically non-significant for 1992 in both regions (as already mentioned in section 7, we cannot explore training in 1988 due to the limitations of data).

The results of educational and training variables are not compatible with the human capital theory, so the more educated and the more trained a person did not improve his position in the labour market, in Crete and Southern Aegean, during the time period of the CSF-1. One explanation could be the fact that the tourist sector plays a major role

in the economy of the regions under examination and so very often higher education is not necessary for the local manpower to find a job. Also, the labour market of the examined regions, like most of the highly attractive Greek tourist destinations, are characterised by high levels of seasonal employment. However, the investigation of the subsequent years is needed in order to have a clearer picture of the 1990s given the fact that, as mentioned in the introduction, the Greek LFS micro-data are now available to researchers.

Finally, the results of the interaction effect analysis show again that training is statistically non-significant in relation to both urbanisation level and educational level in both regions.

The research would merit attention of a wider international readership, since the paper does offer results that are useful for comparative research among European regions. Also, the study will be valuable to those who are interested in designing and implementing training programmes for structural change investigating the deficiencies and inefficiencies which have occurred in the Greek case.

### **References**

Aakvik A. and Dahl S. (2006), Transitions to employment from labour market enterprises in Norway, *International Journal of Social Welfare*, vol. 15 (2), pp. 121-30.

Albrecht J., van den Berg G.J. and Vroman S. (2005), The knowledge lift: The Swedish Adult Education Program that aimed to eliminate low worker skill levels, IZA Discussion Paper 1503, Bonn.

Arellano F.A. (2005), Do training programmes get the unemployed back to work? A look at the Spanish experience, Working Paper 05-25, Economics Series 15, Departamento de Economía, Universidad Carlos III de Madrid.

Becker G. S. (1964), Human capital, Columbia University Press, New York.

Becker G.S. (1975), Human capital: A theoretical and empirical analysis with special reference to education (2<sup>nd</sup> ed.), Columbia University Press, New York.

Bell B., Blundell R. and van Reenen J. (1999), Getting the unemployed back to work: The role of targeted wage subsidies, *International Tax and Public Finance*, 6(3), pp.339-60.

Berman E., Bound J. and Griliches Z. (1994), Changes in the demand for skilled labor within US manufacturing industries: Evidence from the annual survey of manufacturing, *Quarterly Journal of Economics*, CK, pp. 367-98.

Bjorklund A. and Regner H. (1996), Experimental evaluation of European labour market policy, in Schmid G., O'Reilly J. and Schomann K. (eds), *International Handbook of Labour Market Policy and Evaluation*, Edward Elgar, Cheltenham.

Brodaty T., Crepon B. and Fougere D. (2001), Using matching estimators to evaluate alternative youth employment programs: Evidence from France, 1986-1988, in Lechner M. and Pfeiffer F. (eds), *Econometric evaluation of labour market policies*, Physica, Heidelberg.

Cavaco S., Fougere D. and Pouget J. (2005), Estimating the effect of a retraining program for displaced workers on their transition to permanent jobs, IZA Discussion Paper 1513, Bonn.

Centeno L., Centeno M. and Novo A.A. (2005), Evaluating the impact of a mandatory job search program: Evidence from a large longitudinal data set (mimeo).

Cockx B. (2003), Vocational training of unemployed workers in Belgium, *Applied Economics Quarterly*, 49 (1), pp. 23-48.

Cueto B. and Mato F. J. (2009), A non-experimental evaluation of training programmes: Regional evidence for Spain, *The Annals of Regional Science*, vol. 43, No 2, pp. 415-33.

Dolton P. and Vignoles A. (2000), The incidence and effects of over-education in the UK graduate labour market, *Economics of Education Review*, 19 (2), pp. 179-98.

ESYE (National Statistical Service of Greece, 1988-2003), *Statistical Yearbook and Labour Force Survey*.

EUROSTAT (1995), *Education and employment prospects*.

Fay R. (1996), Enhancing the effectiveness of active labour market policies: Evidence from programme evaluations in OECD countries, *Labour Market and Social Policy occasional papers*, No 18, OECD, Paris.

Felstead A., Green F. and Mayhew K. (1998), Interpreting training statistics in Europe: Issuing a health warning, *European Journal of Vocational Training*, No 14, pp. 62-9.

Fitzenberger B. and Speckesser S. (2005), Employment effects of the provision of specific professional skills and techniques in Germany, Department of Economics, Goethe-University Frankfurt (mimeo).

Gerfin M. and Lechner M. (2000), Micro-econometric evaluation of the active labour market policy in Switzerland, *IZA Discussion paper* No 154, Bonn.

Glytsos N. P. (1990), Modeling future higher education-labour market imbalances: A multi-scenario approach, *Economics of Education Review*, vol. 9, No 1, pp. 1-23.

Graversen B. (2004), Employment effects of active labor market programs: Do the programs help welfare benefit recipients to find jobs?, PhD thesis, Department of Economics, University of Aarhus.

Graversen B. and Jensen P. (2004), A re-appraisal of the virtues of private sector employment programs, Chapter 3 in Graversen B.

Green F., Felstead A. and Gallie D. (1998), Changing skill-intensity: An analysis based on job characteristics, working paper.

Hämäläinen K. and Ollikainen V. (2004), Differential effects of Active Labor Market Programmes in the early stages of young people's unemployment, VATT Research Reports 115, Helsinki.

Hartog J. (1997), On returns to education: Wandering along the hills of ORU land, Keynote speech for the LVIIth Conference of the Applied Econometrics Association, Maastricht, May.

Heckman J. J., LaLonde R. J. and Smith J. A. (1999), The economics and econometrics of active labour market programs, in Ashenfelter O. and Card D. (eds), *Handbook of Labor Economics*, volume 3A, Elsevier, Amsterdam, pp. 1865-2097.

Hogelund J. and Holm A. (2005), Returning the long-term sick-listed to work: The efforts of educational measures and employer separations in Denmark, in Saunders P. (ed.), *Welfare to Work in Practice. Social Security and Participation in Economic and Social Life*, International Studies on Social Security, vol. 10, Aldershot, Ashgate.

Hujer R., Thomsen S. and Zeiss C. (2004), The effects of vocational training programmes on the duration of unemployment in Eastern Germany, IZA Discussion Paper 1117, Bonn.

Iliades N. (1995), Continuing vocational training in Greece, National Report (in the context of FORCE), National Institute of Labour, January (in Greek).

IN.E./GSEE (Institute of Labour/General Confederation of Workers of Greece) – ADEDY (Civil Servants' Supreme Administrative Council) (1999), The Greek economy and the employment, Annual Report, Reports No 1, Athens, August (in Greek).

Jackman R., Layard R. and Nickell S. (1996), Combating unemployment: Is flexibility enough?, Discussion Paper No 293, CEP, LSE.

- Johnes G., Taylor J. and Ferguson G. (1987), The employability of new graduates: A study of differences between UK universities, *Applied Economics*, 19, pp. 695-710.
- Kanellopoulos C. (1984), Education and labour market in Greece (in Greek), in *Implications of technological and scientific revolution*, TEI of Athens, Athens, pp. 108-15.
- Katsikas Ch. (2005), Studies-Vocation and labour market, *Atrapos* (in Greek).
- Kluve J. and Schmidt C. M. (2002), Can training and employment subsidies combat European unemployment?, *Economic Policy: A European Forum*, issue 35, October, pp. 411-48.
- Kluve J., Lehmann H. and Schmidt C. M. (1999), Active labour market policies in Poland: Human capital enhancement, stigmatization, or benefit churning?, *Journal of Comparative Economics*, vol. 27 (1), pp. 61-89.
- Kluve J., Lehmann H. and Schmidt C.M. (2005), Disentangling treatment effects of Active Labor Market Policies: The role of labor force status sequences, RWI Essen (mimeo).
- Krueger A.B. and Summers L.H. (1987), Reflections on the inter-industry wage structure, in Lang K. and Leonard J. (eds), *Unemployment and the structure of labour markets*, Basil Blackwell, Oxford, pp. 17-47.
- Larsson L. (2000), Evaluation of Swedish youth labour market programmes, Working paper No 6, Department of Economics, Uppsala University.
- Lechner M. (2000), An evaluation of public sector sponsored continuous vocational training programs in East Germany, *Journal of Human Resources*, vol. 35, pp. 347-75.
- Lechner M., Miquel R. and Wunsch C. (2005), Long run effects of public sector sponsored training in West Germany, CEPR Discussion Paper 4851.



Lechner M., Miquel R. and Wunsch C. (2007), The curse and blessing of training the unemployed in a changing economy: The case of East Germany after unification, *German Economic Review*, vol. 8, November, pp. 468-509.

Leetmaa R. and Vörk A. (2004), Evaluation of Active Labor Market Programmes in Estonia, PRAXIS Tallinn (mimeo).

Lorentzen T. and Dahl E. (2005), Active labour market programmes in Norway: Are they helpful for social assistance recipients?, *International Journal of Social Welfare*, vol. 14 (2), pp. 86-98.

Machin S. (1996), Wage inequality in the UK, *Oxford Review of Economic Policy*, XII, pp. 47-64.

Machin S. and van Reenen J. (1998), Technology and changes in skill structure: Evidence from seven OECD countries, *The Quarterly Journal of Economics*, November, pp. 1215-44.

Malmberg-Heimonen I. and Vuori J. (2005), Activation or discouragement - The effect of enforced participation on the success of job-search training, *European Journal of Social Work*, 8 (4), pp. 451-67.

Mato F. J. and Cueto B. (2008), *Un analisis de los efectos de las politicas de formacion a desempleados*, *Rev. Econ. Apl.* <http://www.revecap.com/revista/aceptados/matocueto.pdf> (in press).

Meghir C., Ioannides Y. and Pissarides C. (1989), Female participation and male unemployment duration in Greece, *European Economic Review*, 33, pp. 395-406.

Murray A. and Steedman H. (1998), Growing skills in Europe: The changing skills profiles of France, Germany, the Netherlands, Portugal, Sweden and the UK, TSER, Discussion Paper No 399, CEP, LSE.

OECD (1990), *Employment Outlook*, OECD, Paris.

OECD (1993), Active labour market policies: Assessing macro-economic and micro-economic effects, Employment Outlook, ch. 2, OECD, Paris, pp. 39-80.

Prais S. J. (1995), Productivity, education and training: An international perspective, National Institute for Economic and Social Research, Cambridge University Press.

Raaum O. and Torp H. (2002), Labour market training in Norway: Effect on earnings, Labour Economics, vol. 9 (2), pp. 207-47.

Regner H. (2002), A non-experimental evaluation of training programmes for the unemployed in Sweden, Labour Economics.

Rodokanakis S. (2009), Investigating the unemployment risk in Greece from the LFS individual anonymised records: The case of Central Macedonia, The Empirical Economics Letters, vol. 8, No 1, January, pp. 35-43.

Rodokanakis S. and Tryfonidis D. (2008), The probability of being unemployed in the three Northern Greek regions during the CSF-1: Econometric analysis of the LFS micro-data, Journal of European Economy, vol. 7, special issue (following a selection of papers presented at the International Conference on Applied Economics (ICOAE) 2008, Kastoria, Greece, 15-17 May), pp. 332-47.

Rodokanakis S. and Tryfonidis D. (2009), "Unemployment hazard in the Aegean islands: Econometric analysis of the LFS micro-data", in Brox J. A. and Baltas N. (eds), *The global economics of a changing environment: Studies in the structure, performance and reform of economics, organizations and business throughout the globe*, chapter 14, North Waterloo Academic Press, Waterloo, Canada, June, pp. 211-24.

Rosholm M. and Svarer M. (2004), Estimating the threat effect of Active Labor Market Programs, Working Paper No 6, Department of Economics, University of Aarhus.

Sanyal B. C. (1987), Graduate unemployment and education, in Psacharopoulos G. (ed.), *Economics of education: Research and studies* (Education and Employment-Part IV), Pergamon Press, pp. 172-9.

Stanley M., Katz L. and Krueger A. B. (1999), Impacts of employment and training programs: The American experience, Harvard University (mimeo).

Steiger H. (2005), Is less more? A look at non-participation in Swiss active labor market programmes, University of St. Gallen (mimeo).

Stenberg A. (2005), Comprehensive education for the unemployed - Evaluating the effects on unemployment of the Adult Education Initiative in Sweden, *Labour*, 19, pp. 123-46.

van Ours J.C. (2001), Do active labour market policies help unemployed workers to find and keep regular jobs?, in Lechner M. and Pfeiffer F. (eds), *Econometric evaluation of labour market policies*, Physica, Heidelberg.

Weber A. and Hofer H. (2003), Active job-search programs a promising tool? A micro-econometric evaluation for Austria, IHS working paper, Economic Series 131, Vienna.

Winter-Ebmer R. (2006), Coping with a structural crisis: Evaluating an innovative redundancy-retraining project, *International Journal of Manpower*, 27 (8), pp. 700-21.

[www.economics.gr](http://www.economics.gr), Access in 25 Nov. 2005, in The counties (NUTS 3) and regions (NUTS 2) of Greece.

**Stavros RODOKANAKIS**, Department of Social and Policy Sciences, University of Bath. Research interests: European integration,

cohesion policies of the EU, regional development and policy evaluation.

Publications (selection):

– Rodokanakis S. (2009), “Investigating the unemployment risk of Central Macedonia in Greece from the LFS individual anonymised records“, *The Empirical Economics Letters*, vol. 8, No 1, January, pp. 35-43.

– Rodokanakis S. (2009), “Political approach of the EU structural intervention” in *Current Politics and Economics of Europe*, vol. 20, No 1, pp. 99-114