ΥΠΟΥΡΓΕΙΟ ΠΟΛΙΤΙΣΜΟΥ,
ΠΑΙΔΕΙΑΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ

ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΕΡΕΥΝΑΣ
ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ

ΔΙΑΧΕΙΡΙΣΤΗΣ ΠΡΟΓΡΑΜΜΑΤΟΣ

ICELAND LIECHTENSTEIN NORWAY
eea grants

ACTION: 'PARTICIPATORY ACTION RESEARCH TO ADDRESS UN/UNDER-EMPLOYMENT AT THE LOCAL LEVEL (EEA GR07/3694)'

WP1: 'Regional industrial mix, specialization and un-/ under-employment in Greece'

Deliverable 1.2: 'Submission of reporting paper to international conference'

Responsible Partner: University of Aegean

Subject area 'Research within Priority Sectors (GR07)'

Subject priority 'Local and regional initiatives to reduce national inequalities and to promote social inclusion'

Programme EEA Grants 2009-2014

Co-funding: European Economic Area grants (EEA Grants, 2009 – 2014, www.eeagrants.org) and Public Investments Programme, General Secretariat for Research and Technology of the Ministry of Education and Religious Affairs (Programme Operator, www.gsrt.gr)

‘ΕΡΕΥΝΑ ΣΥΜΜΕΤΟΧΙΚΗΣ ΔΡΑΣΗΣ ΓΙΑ ΤΗΝ ΑΝΤΙΜΕΤΩΠΙΣΗ ΤΗΣ ΑΝΕΡΓΙΑΣ ΚΑΙ ΥΠΟΑΠΑΣΧΟΛΗΣΗΣ ΣΤΟ ΤΟΠΙΚΟ ΕΠΙΠΕΔΟ (ΕΟΧ GR07/3694)’

Πακέτο Εργασίας 1 (WP1) – Περιφερειακό κλαδικό μίγμα, εξειδίκευση και ανεργία / υπο-απασχόληση στην Ελλάδα

Παραδοτέο 1.2: Υποβολή ανακοίνωσης ερευνητικών αποτελεσμάτων σε διεθνές συνέδριο.

Υπεύθυνος φορέας: Πανεπιστήμιο Αιγαίου

Πρόγραμμα «Ακαδημαϊκή Έρευνα στους Τομείς Προτεραιότητας/GR07»

Θεματική Προτεραιότητα: «Τοπικές και περιφερειακές πρωτοβουλίες για τη μείωση των εθνικών ανισοτήτων και την προώθηση της κοινωνικής ενσωμάτωσης»

Χρηματοδοτικός Μηχανισμός ΕΟΧ 2009-2014

Συγχρηματοδότηση: Χρηματοδοτικός Μηχανισμός Ευρωπαϊκού Οικονομικού Χώρου (ΧΜ ΕΟΧ 2009 – 2014, www.eeagrants.org) και Εθνικό Πρόγραμμα Δημοσίων Επενδύσεων, της Γενικής Γραμματείας Έρευνας και Τεχνολογίας του Υπουργείου Παιδείας και Θρησκευμάτων (Διαχειριστής Προγράμματος, www.gsrt.gr)

Regional industrial mix, specialization and un-/ under-employment across Greek regions:

estimating the harsh impact of austerity based on location quotient analysis

Gourzis Konstantinos[1], Seretis Stergios[1], Maria Tsampra[2], Anders Underthun[3] and Gialis Stelios[1*]

[1]Department of Geography, University of Aegean, Greece

[2]Department of Business Administration of Food and Agricultural Enterprises University of Patras, Greece

[3]Work Research Insitute, Oslo and Akershus University College of Applied Sciences, Norway

[*] Corresponding Author, stgialis@aegean.gr

ABSTRACT

The paper discusses the role of divergent industrial specialisations in unemployment and underemployment patterns across the regions of Greece. Underemployment is identified through waged part-time work, a form of expanding atypical employment related to the intensifying precariousness of the Greek labour market under crisis. The paper is based on an analytical political-economy critical framework which allows for identifying the interfaces between diverse regional patterns of unemployment and underemployment, on the one hand, and production restructuring processes, on the other. For this, statistical data are analyzed for two distinctive periods: the 2005-2008 period of economic expansion, in the aftermath of the Olympic Games and related investments and the 2009-2012 period of recession, right after the outburst of the Eurozone crisis. Total employment, unemployment, full-time and part-time work data are extracted for the regional (NUTS-II) and the sectoral (NACE-II) level of analysis from the annual Labour Force Surveys.

Specifically, the paper accounts for regional specialization through the calculation of the location quotient (LQ) index for all sectors of the regional economy. As indicated, the expansion of un-/ under-employment has already been noticeable in the pre-crisis period. However, post-crisis patterns illustrate the shift in many regional labor markets – even the resilient ones (e.g., tourism) – toward larger shares of un-/ under-employment as opposed to permanent or full-time employment in a context of employment devaluation and decline in all sectors. In addition, our analysis reveals that divergence in regional underemployment and relative employment performance can be explained by region-specific structural advantages.

1. Introduction

The purpose of this paper is to investigate the problem of underemployment and rising unemployment in Greece during the ongoing crisis and recession. Our main research question: is there expansion of underemployment? If so, which sectoral and regional patterns can be identified? Along with this we also explore patterns of industrial restructuring and diversification, and how these potentially enhance or diminish regional robustness.

The underutilization and waste of human resources, reflected by shrinking work opportunities and hindered access to employment, has become a major cause of economic inequality and social exclusion. Moreover, regional path dependence and specialization can, with varying degrees, contribute to resilience against external shocks such as the Eurozone crisis (Hassink, 2010; Martin, 2010). To this purpose, the paper will provide territory-specific accounts of un/underemployment patterns. Within the proposed political-economy critical framework, un/underemployment is explored in relation to regional economic structures. The analysis explores the interface between local production specialization and restructuring on one hand, and increasing local labour surplus on the other. To serve the research objectives, the paper focuses on all thirteen (13) Greek regions in order to examine the industrial mix and production specialization in relation to employment and unemployment patterns, and assess how local competitive advantages have changed due to the crisis. Due to space restrictions, we have chosen to examine the underemployment type that we regard as the most important, in addition to expanding unemployment, namely waged part time employment.

2. Underemployment as an individual aspect of flexible labour trends: a theoretical framework

The current global economic crisis which has been characterized as the first depression of the millennium, can be argued to have put an end to the smooth and, mostly, robust capitalist reproduction of the Post-War Era (Harvey, 2011). In order to overcome its structural dead ends, capital needs to develop a concrete forward-looking strategy. Labour force price reduction is one of the most common paths selected as a way to maintain profitability, in contrary to advancing production technology, which usually has a higher cost (Shaikh 2011). As many scholars agree, minimizing labour costs is very important, although there are also other ways of maintaining profitability, such as introducing new products and processes, and, by that innovating in such a way that companies might grow and become more profitable even without cutting wages (Hadjimichalis, 2011; Harvey, 2011). Yet, the aspect of economic flexibility through wage cuts seems to be the main driver in semi-peripheral capitalist countries such as Greece (Gialis and Leontidou, 2014).

The fundamental research hypothesis, which is to be tested in the empirical part, is that the phenomenon of underemployment is an individual aspect of flexible labour trends, triggered by recession and expanding amid crisis, though in uneven geographical and sectoral, terms. Underemployment is strongly connected with the 'industrial reserve army' debate along with its interrelationship with flexible and precarious forms of employment (Kalleberg, 2000). Our theoretically-informed empirical analysis links underemployment to certain forms of flexible employment and compare their changes with changing total employment across Greek regions of different productive specialization.

Moreover, our analysis explores the proposition made by the classical political economy tradition according to which labor devaluation is the fundamental mechanism helping the economic system to overcome its crisis effect. Departing from a Marxist dialectical-materialist methodology and expanding it to include contemporary radical theorizations of socio-spatial restructuring, we consider the various ways through which changes in capitalist labor process and the value of labour power are manifesting across the Greek regions. Regional performance has been systematically discussed as an issue of absolute-competitive (dis)advantages or has been related to international competitiveness and productivity, ignoring several important issues of hierarchy, unevenness and profitability within the EU framework and abroad (Hadjimichalis & Hudson, 2014). For example, an intriguing issue commonly neglected is the diminishment of international competitiveness of semi-peripheral countries (comparative vs. absolute advantage) vis-à-vis the North-South divide of the Euro-Zone (Seretis and Tsaliki, 2015).

2.1 Crisis, atypical work and underemployment across multiple geographical scales

As argued in relevant debates, the expansion of atypical employment within and across labor markets is an essential option of capital for overcoming crises. In the context of capitalist internationalization (or simply 'globalization') and the changing accumulation regime, research on unemployment has focused on the issue of labour flexibility as a way to maintain employability amid economic restructuring. Flexible employment, in the form of atypical work (i.e. part-time, temporary, self-employment on own basis, family-help and other than full-time open-ended salaried), has been seen as a practice to ensure jobs for the unemployed (Barbieri and Scherer 2009, Clauwaert and Schömann 2013).

However, the crisis-triggered recession, since 2008, has questioned the validity of such accounts, especially in the severely hit economies of the EU South (Dunford and Greco 2006, Hadjimichalis and Hudson 2014). For example, in a recent work focusing on regions of Greece, Spain and Italy, Gialis and Leontidou (2014) found that employment flexibility (and informality) has a rich background in these countries,

while it is also highly expanding during recession. This finding is in contrast to official EU accounts that theorize Southern labour markets as 'rigid and inflexible'. Yet, there remains a gap concerning theoretically-informed empirical research on how the intersection of production structures and regional labour markets affects unemployment and non-voluntary part-time (or perhaps family-help) employment patterns.

Crisis reforms traditional structures and patterns in the labour market, while eventually expanding the reserve labour army which is a key to achieve a higher level of accumulation and, in turn, overcome the crises of over-accumulation (Harvey, 2011). The very existence of industrial reserve army constitutes a strong factor disheartening any radicalization of the labour force (Mavroudeas, 2014). Recent evidence from Greece shows the expansion of atypical employment and support that there is a diversity of flexible labor forms during the crisis period (Gialis and Tsampra 2015). Increasing economic competition is mainly associated with two strategies: the expansion of new flexible forms of labor and subcontracting (Atkinson, 1987; Theodore & Peck, 2014).

Heterodox and Marxian urban and regional development discourse considers the uneven geographical development as part of the wider global crisis and engages with the 'forgotten notions' of socio-spatial justice and solidarity as integral parts in European integration (Hadjimichalis, 2011). Bachtler and Davies (2010) provide an early remark of the geography of crisis in Western Europe, and question appropriate ways of responding to it, placing specific emphasis to regional policy. OECD (2009) explicitly presents regional policy as a response to economic crisis, focusing on the role of public investment as an instrument for counter-cyclical reaction to crisis. Moreover, research on regional specialization has mainly addressed regional competitive advantages in the aspect of how specific industries and local economies develop over time (Watson and Cooke, 2012). But as the recession has challenged existing growth patterns, there is a need for coming up with new potential productive advantages based on local resources and the capacity of local population to produce long-lasting patterns of development. To address such forward looking strategies, an inclusive, radical and, at the same time, locally-managed approach, which will overcome the drawbacks of mainstream approaches both on the research and policy level, is required (Krugman & Obstfeld, 2012; Shaikh, 2011).

For such an approach, a) the unemployed and underemployed (forming the local labour surplus) constitute territorially-embedded human assets of knowledge and expertise, skills and experience and thus, are considered as indispensable for the recovery and sustainable growth of the local economy; and b) shrinking work opportunities and hindered access to employment is not a problem that can be solved on an individual basis.

The articulation between national and regional scales needs further discussion. Reports based on Eurostat's data often prioritize the dynamics of uneven state relations at the expense of uneven regional ones. However, this may be a 'statistical representation' obscuring particular inter-firm relations, that operate in different spatial

environments and under particular capital–labour relations, the euro being their only common parameter (Hadjimichalis and Hudson 2014).

Furthermore, these aggregate data hide social and spatial divisions of labour and unequal class relations within firms and regions. Although the monetary union has increased intra-euro area trade by 12 to 30 % over a five-year period, southern regions benefited much less (Hadjimichalis, 2011; Hadjimichalis & Hudson 2014). This is so as the market access improvements benefited firms in some north-central European regions more than those in southern regions due to three main factors; First, the absolute cost reduction for the entire eurozone increased the relative disadvantage for those a step back at the time of monetary unification, particularly the peripheral countries that entered the union with higher nominal exchange rates. Second, the loss of the old nation-state regulatory framework, which protected southern firms via monetary devaluation, bilateral international trade agreements and provision of investment incentives, shifted competitiveness within the eurozone to unit labour cost. And third, the operation of market forces drew activity and channeled exchange value flows through trade-generating surpluses to north-central regions at the expense of southern ones (Chang 2007, Deraniyagala and Fine 2001).

In general, the introduction of the euro, along with other functions, is used as a mechanism through which global capitalist pressures shift to local labour markets in order to secure capital's profitability, as analyzed above. Unfortunately, the current dominant urban/regional theories and models often fail to ask questions of who, what and where benefits and loses from the crisis. Moreover, by promoting competitiveness and the success of a few star regions and cities, pay scant attention to conditions of uneven geographical development across European regions, which, as we argued before, played a decisive role in initiating and maintaining the crisis (Hadjimichalis & Hudson, 2014).

3. Divergent industrial specialisations and un-/ under-employment patterns: an analysis across the regions of Greece

3.1 Definitions and methodology

As noted in the introductory section, the present study sheds light upon a relatively under-researched aspect of contemporary labor flexibilization, namely underemployment. More specifically, our aim is to scrutinize a specific type of underemployment and its interconnection to unemployment and atypical work, in the context of crisis-hit Greek regions. By doing so, we aim to substantiate some important theoretical arguments on the relationship between recession, flexible work and underemployment that are common to many EU regions, especially the Southern ones. As mentioned above, due to space limitations, we include one main form of underemployment in the analysis on hand, which is also a basic form of atypical labor: part-time waged employment. Part-time waged work is a central aspect of

contemporary flexibilization trends across EU and abroad (Gialis and Leontidou, 2014; Mavroudeas, 2014).

The time periods the research targets are 2005-08 and 2009-12. The 2005-08 period covers the pre-crisis years right after the 2004 "merriment" of the Olympic mega-projects, the financial speculation and related investments. The 2009-12 period covers the first significant years of economic depression including the Eurozone crisis and the implementation of the first memoranda.

The scale of analysis is the NUTS-II (regional) level. This way, we are able to identify regional inequalities and specializations. The research covers nine (9) grouped sectors (from now on referred as "sectors"), which when aggregated give us the entirety of economic activities. In brief, *Sector 1* includes primary production, *Sectors 2, 3 and 4* the secondary one while *Sectors 5-9* the whole of tertiary activities. Sectors 2, 3 and 4 represent manufacturing, construction and energy activities, respectively, focusing separately on these different segments of the secondary economy, which have a standalone presence in the Greek economy. Likewise, public services along with health and education fall under Sector 8, allowing us to distinguish between them and the rest of the tertiary activities, such as commerce or services that, we believe, present different patterns of underemployment during the crisis. The same applies for sectors linked with a wide spectrum of activities, such as the tourism industry, the 'urbanized' economy or the 'economy of knowledge' - a lively part of the international literature in urban studies related to the rising contribution of professionals and scientists, into contemporary waged-dependent labour- which are also discretely categorized and studied.

For each of the above sectors, concentration in terms of total employment and the form of employment under study is then calculated, and regional and/ or sectoral (dis)advantages are estimated. In specific, the local quotient (LQ) index[1] is calculated across the thirteen (13) nuts-II level Greek regions. Additionally, we scrutinize the performance for all nine sectors on the national scale, to understand the overall link between sectors and underemployment. As we trace common trends in underemployment performance, we carry out a controlled comparison between two clearly defined and *pairable* types of employment: part-time waged employment to full-time waged employment.

[1] The Location quotient (LQ) is a way of quantifying how concentrated a particular industry, employment or demographic group is in a region as compared to a larger spatial entity (usually the nation). It was mainly used by the *economic base theory* to reveal particular regional attributes in comparison to the national average. LQ is computed as an industry's share of a regional total divided by the industry's share of the national total. When LQ values are higher than 1 (e.g. greater than 1.25) then the industry is overrepresented in the region, and the vice versa (Gialis and Tsampra, 2015).

3.2 Groups of regions according to their productive profile

The LQ values of total employment (*see Tables 1a & 1b*) for 2005, 2008, 2009 and 2012 shows that the 13 Greek regions can be divided into four (4) relatively homogenous groups based on their productive profile: the groups of *agricultural, touristic, metropolitan and manufacturing* regions. This categorization is not absolute since many regions have a complex productive profile and specialize on more than one sectors; 'hybrid' regions are pointed out below and differences to the other regions of their group are identified. We conduct the abovementioned taxonomy according to the LQ values of total employment per sector. Specifically, LQ values that are over 1.20-1.25 are considered as important and of notable influence to the production profile of a region. Accordingly, values indicative of under-concentration revealing dim presence of a sector are the ones under 0.70- 0.75 (Gialis and Tsampra, 2015).

The analysis reveals that Greece is still a country of a notable agricultural labour force as more than half (i.e. eight) regions have a salient concentration in sector 1. Yet, we classify four of these regions, -in particular Peloponnese, Eastern Macedonia and Thrace, Thessaly, Western Greece and Epirus- as *agricultural*. Rest of the regions, which hold an important concentration in sector 1 and are not classified as agricultural, present important LQ values in other sectors too, and hold a more mixed productive profile. Thus, they are classified under different categories and are discussed below. Interestingly, the North Aegean region had an agricultural profile in 2005 but not during the next years as recession has severely affected primary production therein.

Central Greece and Western Macedonia are the prominent *manufacturing* regions, and apart from Central Macedonia, which includes the important urban-industrial agglomeration of Thessaloniki and presented a flickering concentration during the pro-crisis years, none other sticks out. Both manufacturing regions present a good performance in agriculture too, therefore their production model could be also described as *agricultural-manufacturing*. Yet there is an important difference between them: while Central Greece encompasses the most important industrial establishments in Greece, especially those found in the Thiva- Schimatari industrial area -up to the main motorway of Greece's mainland and no more than 150 km away from the Greek capital (Athens)-, Western Macedonia presents its most important concentrations in sector 3 (energy and resources), being the pioneer energy producer region in the country and having a multitude of brown coal (lignite) plants in its territory.

Table 1a: LQ index for Total Employment per region and sector, sectors 1 – 5, 2005, 2008, 2009 & 2012

	1. Agriculture				2. Manufacturing				3. Energy and resources				4. Construction				5. Commerce, transportation and communications			
	2005	2008	2009	2012	2005	2008	2009	2012	2005	2008	2009	2012	2005	2008	2009	2012	2005	2008	2009	2012
EASTERN MACEDONIA & THRACE	2,18	2,21	2,24	2,23	1,11	0,98	0,85	0,86	0,61	0,80	0,80	0,68	0,69	0,89	0,83	0,91	0,74	0,72	0,75	0,71
CENTRAL MACEDONIA	1,03	1,07	1,05	1,04	1,29	1,23	1,14	1,09	0,56	0,95	0,83	0,85	0,89	0,97	0,92	0,76	1,02	1,02	1,04	1,01
WESTERN MACEDONIA	1,39	1,57	1,66	1,34	1,28	1,38	1,48	1,57	5,77	2,81	3,38	3,64	1,18	1,25	1,05	1,12	0,66	0,69	0,70	0,70
EPIRUS	1,54	1,68	1,70	1,54	0,77	0,77	0,81	0,84	1,30	0,89	0,97	1,08	1,45	1,32	1,30	1,66	0,78	0,73	0,76	0,85
THESSALY	2,03	1,82	1,75	1,94	0,91	1,00	1,10	0,95	0,63	0,71	0,87	1,15	1,00	1,01	0,85	0,98	0,81	0,76	0,78	0,75
IONIAN ISLANDS	1,45	1,47	1,50	1,49	0,40	0,37	0,32	0,66	0,22	0,73	0,78	0,13	1,09	1,16	1,34	1,12	1,02	0,94	1,02	0,90
WESTERN GREECE	1,91	1,80	1,86	1,97	0,65	0,67	0,75	0,68	0,69	0,80	0,61	0,82	1,18	1,17	1,13	1,14	0,87	0,93	0,93	0,89
CENTRAL GREECE	1,36	1,70	1,64	1,46	1,34	1,38	1,47	1,83	0,85	1,39	1,30	1,19	1,19	1,18	1,23	1,20	0,92	0,80	0,75	0,81
ATTICA	0,05	0,08	0,08	0,08	1,08	1,08	1,09	1,06	0,99	1,00	0,96	0,93	0,98	0,90	0,91	0,85	1,17	1,18	1,18	1,22
PELOPONNESE	2,76	2,77	2,69	2,32	0,69	0,62	0,65	0,81	1,06	1,08	1,03	0,87	0,83	0,94	1,06	1,32	0,75	0,77	0,77	0,76
NORTH AEGEAN	1,45	1,20	1,10	0,95	0,54	0,59	0,55	0,81	0,57	0,90	0,85	0,79	1,04	0,91	0,92	1,21	0,90	1,01	1,03	0,95
SOUTH AEGEAN	0,42	0,57	0,59	0,68	0,61	0,55	0,58	0,62	2,42	1,38	1,90	2,45	1,34	1,23	1,35	1,88	1,05	1,07	1,02	0,98
CRETE	1,73	1,43	1,48	1,66	0,56	0,69	0,68	0,67	1,15	0,71	0,88	0,66	1,05	1,18	1,33	1,11	0,90	0,94	0,87	0,87

Source: Authors' calculation based on HELSTAT's Labour Force Survey data

Colors legend

Groups of regions: Grey: metropolitan, blue: touristic, red: manufacturing and green: agricultural

LQ values: Values equal to 1 are yellow, above that 'get greener' and below that 'get redder'

Table 1b: LQ index for Total Employment per region and sector, sectors 6-9, 2005, 2008, 2009 & 2012

	6. Hotel, food and catering				7. Knowledge economy				8. Public administration, healthcare and education				9. Leisure, arts and NRA services			
	2005	*2008*	*2009*	*2012*	*2005*	*2008*	*2009*	*2012*	*2005*	*2008*	*2009*	*2012*	*2005*	*2008*	*2009*	*2012*
EASTERN MACEDONIA & THRACE	0,98	0,83	0,84	0,69	0,51	0,66	0,57	0,68	1,02	1,08	1,11	1,06	0,55	0,57	0,62	0,54
CENTRAL MACEDONIA	0,89	0,80	0,85	0,94	0,90	0,91	0,92	1,00	0,94	0,95	0,97	1,03	0,93	0,93	0,99	0,94
WESTERN MACEDONIA	0,71	0,82	0,84	0,91	0,62	0,39	0,42	0,51	1,10	1,04	0,97	0,95	0,53	0,67	0,60	1,07
EPIRUS	0,82	1,09	1,04	1,05	0,62	0,60	0,59	0,42	1,21	1,19	1,11	1,11	0,65	0,75	0,83	0,55
THESSALY	0,87	0,97	0,87	0,93	0,68	0,61	0,67	0,62	0,95	1,11	1,12	0,97	0,68	0,76	0,68	0,91
IONIAN ISLANDS	2,99	2,91	2,48	2,15	0,70	0,67	0,73	0,68	0,65	0,68	0,65	0,69	0,62	0,87	0,73	1,39
WESTERN GREECE	1,07	0,90	0,87	0,90	0,63	0,69	0,67	0,50	0,97	1,05	0,98	1,02	0,77	0,68	0,73	0,66
CENTRAL GREECE	1,05	1,07	0,98	1,19	0,54	0,54	0,62	0,53	0,87	0,80	0,83	0,76	0,66	0,65	0,68	0,69
ATTICA	0,74	0,80	0,81	0,77	1,50	1,45	1,46	1,48	1,08	1,03	1,06	1,09	1,40	1,40	1,34	1,25
PELOPONNESE	0,81	0,81	1,00	0,91	0,57	0,49	0,50	0,55	0,85	0,93	0,77	0,77	0,66	0,73	0,82	1,00
NORTH AEGEAN	1,37	1,02	1,03	1,13	0,57	0,70	0,65	0,90	1,39	1,42	1,41	1,18	0,37	0,54	0,78	0,75
SOUTH AEGEAN	2,89	2,87	2,76	2,30	0,69	0,67	0,69	0,78	0,86	0,88	0,84	0,82	0,92	0,72	0,78	0,73
CRETE	1,71	1,71	1,71	1,77	0,65	0,90	0,84	0,68	0,90	0,87	0,85	0,82	0,82	0,63	0,66	0,92

Source: Authors' calculation based on HELSTAT's Labour Force Survey data

Colors legend

Groups of regions: Grey: metropolitan, blue: touristic, red: manufacturing and green: agricultural

LQ values: Values equal to 1 are yellow, above that 'get greener' and below that 'get redder'

The group of *metropolitan* regions is the one most easily defined, since it includes the two major metropolitan areas in Greece: Athens in Attica, and Thessaloniki in Central Macedonia. These two regions comprise almost two thirds of the Greek GDP and total employment, and despite their common highly urbanized character present some notable differences regarding their productive profile. Firstly, Attica is the leading region where the so-called knowledge economy (sector 7), as well as leisure, arts and NRA services (sector 9) or commerce, transportation and communications (sector 5) are over-represented. The former two sectors are closely related to urban economies of scale and agglomeration, while the latter depicts the pivotal role of Athens / Attica in organizing flows of goods and information within the country and abroad. Secondly, Central Macedonia, performs close to the national share in almost every sector, except for under-concentrated energy and resources (sector 3), and relatively strong -before 2009 but not afterwards- manufacturing (sector 2). The productive model of Central Macedonia took a relatively heavier blow during the crisis of the Eurozone, at least when compared to Attica, something depicted in the LQ values of manufacturing and construction, and pictured below through the unemployment figures.

Finally, all four island regions of Greece are grouped as *touristic*. The sector standing as the main evidence for that is the sixth (hotels, food and catering): there, the Ionian Islands, South Aegean, Crete and North Aegean perform remarkably over the respective national shares, although the latter region presents a remarkably falling concentration since 2005. Different backgrounds and socio-economic trajectories may explain diversified trends observed: North Aegean is a relatively deprived isolated province, with limited entrepreneurship and relatively high numbers of state and military personnel, as a result of both limited entrepeneurship and structural factors (e.g. insularity). Hence, the region lost much of its productive potential in agriculture and tourism, since the outbreak of recession, and became a pioneering area in sector 8 (public administration, healthcare and education) where employment figures were not hardly hit countrywide. The Ionian Islands, South Aegean and Crete, on the other hand, hold more diversified and less state-dependent productive profiles along with important concentrations is certain sectors. This is especially so for the South Aegean, where intense construction activity in tourism has been recently observed, as well as for Crete where relatively big agricultural holdings and exports are idiosyncratic of the regional economy (Psycharis et al, 2014).

3.3 Changing unemployment figures across different productive specializations

Increments in the total number of unemployed and the respective rates of unemployment between 2009 and 2012 are universal and harsh (*see Table 2*), revealing a true and remarkable destruction of productive forces across all regions. Focusing on common trends within the four groups of regions provides us a variety of hints on how each group copes with the recent recession pressures. Firstly, one can see that the *touristic* regions, with the exception of North Aegean, do a lot better in terms of

mitigating job losses compared to the rest of productive profiles. Especially South Aegean and the Ionian Islands hold relatively low and stable unemployment figures. This applies to both time periods studied. Crete, on the other hand, has had its unemployment rates raise abruptly. North Aegean especially, which alongside Epirus is one of the poorest regions in the EU-15, had the sharpest raise out of all regions, confirming the profile of a highly vulnerable region. No matter the change though, the touristic regions hold either a good or a median position in terms of unemployment rates.

Following the touristic socio-spatial entities, a*gricultural regions* coped with the crisis better than *metropolitan* or *industrial* regions, even though those facing constant struggle with unemployment, like Western Greece and Epirus, did not change their position drastically. Yet, the deprived regions of Epirus and Eastern Macedonia and Thrace, had slightly lower increments than the more developed and diverse economies of Thessaly, Western Greece or Peloponnese – the latter maintaining a 'fairly high' rate throughout both periods examined.

Table 2: Unemployment rates (%) and change in the total number of unemployed (%) per region, 2005-2008 and 2008-2012

	2005	*2008*	*2005-08 %*	*2009*	*2012*	*2009-12 %*
EASTERN MACEDONIA & THRACE	11,9	8,8	*-27,6%*	11,1	22,8	*101,4%*
EPIRUS	11,5	9,9	*-10,9%*	11,2	22,5	*92,4%*
THESSALY	9,4	8,3	*-12,1%*	9,2	22,6	*134,0%*
WESTERN GREECE	10,7	9,9	*-6,5%*	9,7	25,6	*152,8%*
PELOPONNESE	8,6	7,0	*-15,0%*	7,9	19,2	*128,8%*
WESTERN MACEDONIA	18,1	12,5	*-31,0%*	12,4	29,7	*124,5%*
CENTRAL GREECE	11,0	8,5	*-22,6%*	10,5	27,9	*165,2%*
IONIAN ISLANDS	8,6	8,3	*0,0%*	9,5	14,7	*51,1%*
NORTH AEGEAN	10,6	4,7	*-58,3%*	6,6	21,8	*270,0%*
SOUTH AEGEAN	9,5	8,3	*-10,1%*	12,3	15,4	*24,0%*
CRETE	7,2	6,4	*-9,7%*	9,0	22,3	*140,1%*
CENTRAL MACEDONIA	11,2	8,4	*-24,1%*	10,1	26,2	*152,0%*
ATTICA	9,1	6,7	*-25,2%*	9,1	25,8	*175,3%*
TOTAL	**10,0**	**7,8**	*-21,4%*	**9,6**	**24,4**	*146,6%*

Source: Authors' calculation based on HELSTAT's Labour Force Survey data

Colors legend
Groups of regions: Grey: metropolitan, blue: touristic, red: manufacturing and green: agricultural
Rates values: Values close to median are yellow, above that 'get greener' and below that 'get redder'

Manufacturing regions do not present equal resilience: Western Macedonia steadily holds the highest unemployment rates in the country, while Central Greece follows closely having the second highest rates. Indeed, the manufacturing (sector 2) lost so

much labor during 2009-12, second only to construction (sector 4). Finally, in *metropolitan* regions, which account for almost 60% of Greece's employment, there exist some homogenous trends although the point of departure is somewhat different. Attica, on the one hand, showed some of the lowest unemployment rates in the pro-crisis period, which peaked in 2012 however, after a sharp raise compared only to few other regions. Central Macedonia, on the other hand, never held equally low rates as Attica, but in 2012 both regions ended up having similar figures, leading to the conclusion that metropolitan areas received a critical blow during this ongoing recession, and saw their unemployment rates skyrocketing. Indicative of the pressure the industrial sector received lately, as mentioned above, is the fact that Central Macedonia has the third highest unemployment rate in 2012.

In summary, industrial and metropolitan regions proved to be weaker when under recession pressures. Agricultural regions took diverse courses, ending up coping with crisis better than metropolitan but clearly worse than touristic regions. The latter showed a remarkable stability and resilience -with the exception of North Aegean-, as hotels and catering activities (sector 6) did not retreat as much as other sectors did (see also Psycharis et al, 2014).

3.4 Concentrations of full and part time waged employment per sector

This section examines the course of full and part time waged employment among the sectors under examination. The reason why we begin by sectoral breakdown, before engaging with regions, is to show the relative fluctuations of figures between these two forms of employment, and, thus, identify major sectoral shifts in underemployment. Our observations are based on the LQ values of each type of employment per sector, which means that we do not research whether part-time expands at the expense of full-time waged employment or not, but rather trace the concentrations of the abovementioned types of employment over time.

Very high concentrations of part-time waged employment can be found in two sectors: in sector 9, Leisure, arts and related activities, where it is almost three times higher than the national share in 2012, and in sector 6, Hotel, food and catering (almost two times higher, *as in Table 3*). Both sectors comprise a variety of tertiary activities, which function frequently under atypical relations of labor, though in a diversified way. The former sector relates to residual services where dependencies between employer and employee become more precarious, therefore part-time waged work slightly backs down over time, especially during recession, giving its place to very informal types of work. This retreat is clearly depicted when looking at the absolute numbers of those under the arrangement of part-time waged employment: sector 9 loses during both periods (2005-08, 2009-12) while almost every other sector gains. This implies that such employment may moderately fall in crisis-hit sectors where its presence is already intense. On the other hand, in sector 6, the flagship of touristic and food activities, there

is a clear raise of part-timers, especially during recession. This tendency is depicted through both LQs and the absolute number of workers.

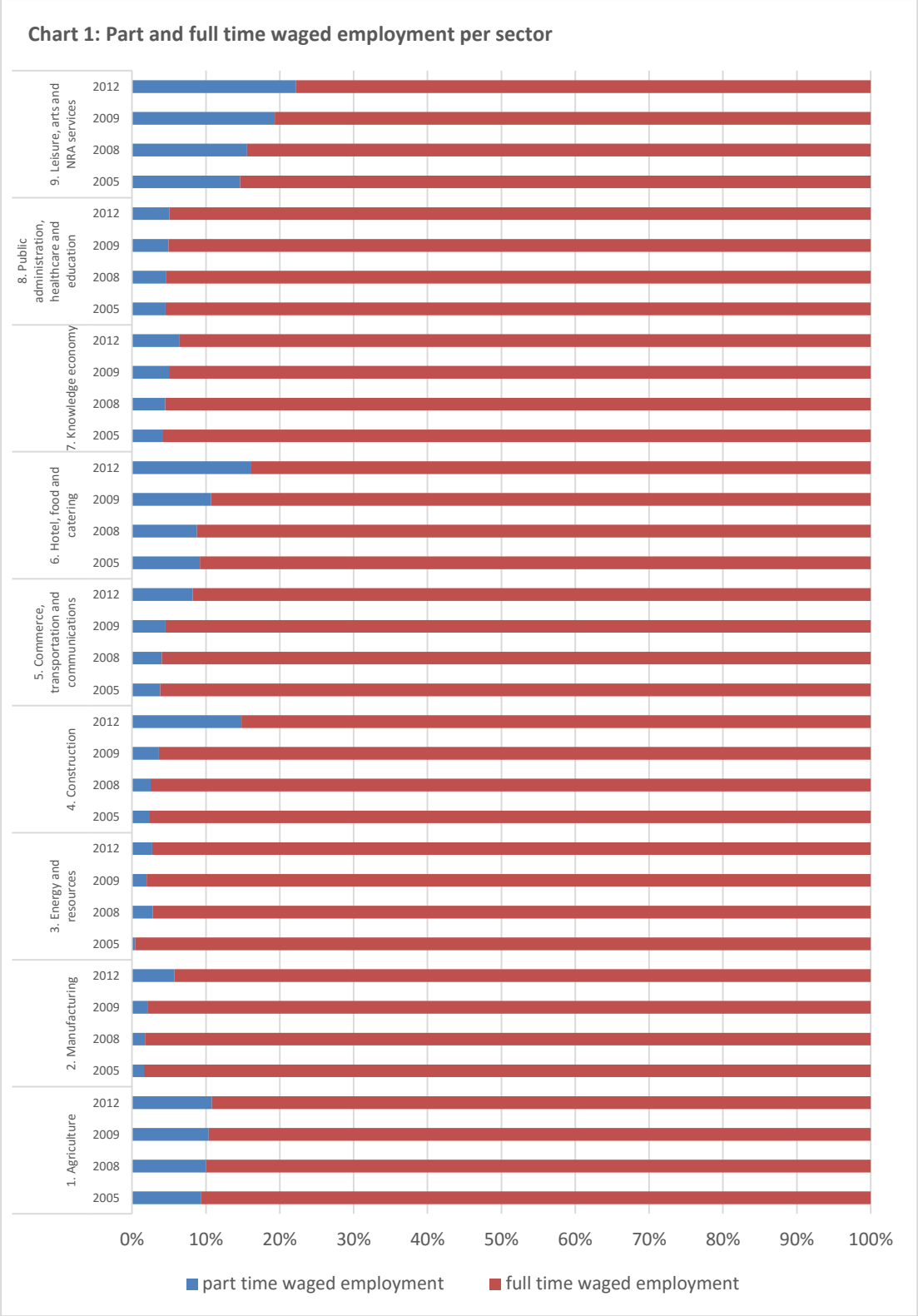
Table 3: LQ index for four types of employment per sector, 2005, 2008, 2009 & 2012

	part time waged employment				full time waged employment				non voluntary part time employment				voluntary part time employment			
	2005	*2008*	*2009*	*2012*	*2005*	*2008*	*2009*	*2012*	*2005*	*2008*	*2009*	*2012*	*2005*	*2008*	*2009*	*2012*
1. Agriculture	0,21	0,24	0,26	0,20	0,10	0,11	0,13	0,15	0,76	0,72	0,61	0,52	3,00	3,66	3,19	2,83
2. Manufacturing	0,40	0,42	0,42	0,80	1,21	1,18	1,19	1,17	0,40	0,30	0,35	0,77	0,38	0,49	0,47	0,66
3. Energy and resources	0,14	0,87	0,53	0,51	1,63	1,53	1,57	1,63	0,18	0,97	0,51	0,43	0,00	0,15	0,20	0,26
4. Construction	0,55	0,57	0,69	1,65	1,08	1,11	1,09	0,85	0,64	0,76	0,93	2,03	0,23	0,18	0,28	0,49
5. Commerce, transportation and communications	0,75	0,77	0,74	0,97	0,92	0,92	0,93	0,97	0,68	0,75	0,67	0,90	0,70	0,67	0,74	0,76
6. Hotel, food and catering	1,79	1,64	1,78	1,82	0,86	0,85	0,88	0,85	1,46	1,22	1,54	1,65	1,60	1,22	1,10	1,19
7. Knowledge economy	0,92	0,93	0,87	0,76	1,02	0,99	0,98	0,98	0,72	0,74	0,68	0,66	0,78	0,67	0,80	0,71
8. Public administration, healthcare and education	1,42	1,39	1,27	0,90	1,46	1,44	1,45	1,52	1,41	1,40	1,29	0,85	0,52	0,52	0,54	0,40
9. Leisure, arts and NRA services	3,92	3,66	3,92	2,96	1,11	1,00	0,97	0,93	3,60	3,50	3,89	2,79	2,19	1,86	1,90	1,93

Source: Authors' compilation and calculations based on HELSTAT's Labour Force Survey data

Colors legend
Regions: Grey: metropolitan, blue: touristic, red: manufacturing and green: agricultural
LQ values: Values equal to 1 are yellow, above that 'get greener' and below that 'get redder'

Two other sectors are worth noticing: sector 8, public administration, healthcare and education and sector 4, construction. The former was the main sector of part-time waged employees' over-representation, but lost its sovereignty from 2009 to 2012, when the country's public authorities decreased their temporary staff and stopped hiring part time workers. The latter sector, which is an activity that traditionally draws upon vast numbers of seasonal and temporary employment, nearly doubled its part-time numbers during recession, and from being a sector of under-concentration, became one of those sticking out. To summarize, there is a tendency of hotel, food and catering as well as of construction activities to expand their influence in this type of employment, while leisure and arts (still holding the densest concentration) and the state services lose ground.



Source: Authors' compilation and calculations based on HELSTAT's Labour Force Survey data

Patterns of full-time waged employment are, more or less, the reverse than those of part-time work: salient sectors are those of energy and resources (sector 3) and public

administration, healthcare and education (sector 8). In both these sectors full-time waged employment's concentration slightly increases, while part-time waged employment retreats. Manufacturing is also worth noticing since full-time waged employment shares are above the respective national shares, but they are backing down, while part-time waged employment expands rapidly. Still, there are not values beyond the thresholds set (0.75-1.25 for LQ values) but there is a clear tendency depicted.

In summary, the sectors that stand out when it comes to underemployment's expanding concentration are manufacturing (sector 2), construction (sector 4), and hotel, food and catering (sector 6). In parallel, concentrations may be retreating in leisure, arts and residual activities (sector 9) but still remain the highest of all. On the other hand, concentrations in public administration, healthcare and education (sector 8) are not important since the recessions' outbreak.

3.5 Balance between full and part-time waged employment: tendencies of flexibilization

This section analyzes the balance between full and part-time waged employment per sector, in a similar fashion as the analysis above (first by sector, then by groups of regions). As *pictured in Chart 1*, the prominent sectors in terms of part-time waged employment share is leisure, arts and residual activities as well as hotel, food and catering. In both sectors, the underemployment form under study significantly expands at the expense of full-time waged labour, without however becoming the norm (though it approaches 20% in both sectors). Manufacturing and construction present dim shares, but with intense expansion tendencies. Finally, the agricultural sector supplements the triad of prominent sectors as it holds a steadily notable share.

Overall, *Chart 1* depicts that almost every sector sees its part-time shares expanding, and that even in those sectors that are not in line with this norm, the balance between these two types of employment does not change in favour of full time employment. Therefore, there is a clear tendency of part-time waged labour expansion over time, even if this type does not hold the 'lion's share' yet. This last observation is of critical importance, since it gives us a hint of the current trends in the Greek labour market.

5. Conclusions

In the introductory section we posed two specific questions regarding major changes during the recession years (2009-12): firstly, if there was any major twist in the production profile of the Greek regions, and secondly, whether underemployment expansion occured, and in which manner.

As much as the first question is concerned, Greek regions can be divided into four different, yet porous and overlapping, groups according their key productive specializations, here defined in terms of total employment figures; the groups of *agricultural*, *touristic*, *metropolitan* and *manufacturing* regions. The regions that belong to each of these groups do not present any major twist in their productive profile during the study period, although some remarkable cases can be observed, as in the case of Central Macedonia's manufacturing or North Aegean's agricultural activities. The former is increasingly becoming one of Greece's 'rust-belt' due to inter-alia the flee of many plants towards the Balkans, in search of cheaper labour costs and more precarious workforce, and recessionary inflated internal devaluation. The latter started to diminish before the crisis and continued to do so amid recession, signaling a structural inadequacy in the region's economy (Gialis and Tsampra, 2015, Psycharis et al, 2014).

As far as the second question is concerned, interestingly enough, we found that in the Greek labor market, which seen on national level lost around 20% of its workers in total, the number of part-time waged employment increased. The unemployment rates skyrocketed almost in every region, while pro-crisis deregulation and flexibilization trends, supposedly aim at preventing this, failed to do so. On the contrary, those sectors struck the harshest way (e.g. manufacturing and construction), had the biggest losses in total employment and the sharpest raises in underemployment.

Regarding the full and part-time bipolar scrutinized, there was a clear sectoral trend found: in almost every sector (apart from energy and resources and public administration, healthcare and education) part-time waged labor expanded rapidly at the expense of its full-time peer. More importantly, it became evident that this upward trend, did not occur solely during the 2009-12, but took place during the pre-crisis years as well.

Concluding, the expansion of un-/ under-employment has already been noticeable in the pre-crisis period. However, post-crisis patterns illustrate the shift in many regional labor markets – even the 'resilient ones' – toward larger shares of un-/ under-employment as opposed to full-time employment in a context of employment devaluation and decline in all sectors.

The above findings may signify that re-/ deregulation of labor, capital, services and trade markets, which formed the underlying philosophy of the Washington Consensus and other nodal EU-treaties, is not beneficial to either all countries or both capital and labor (Krugman and Obsefeld 2012). The New Trade Theory (NTT) argued that absolute convergence occurs only if the structural conditions between trade partners are similar. In other words, the traditional theoretical model suffers from severe shortcomings. The 'new' theory of international trade shows that profits can emerge independently of the existence of comparative advantages (Krugman and Obsefeld 2012). Escalating international competition is inevitably related to both the euro-center's surpluses and the euro-periphery's deficits and debts. From this theoretical view we should approach the current crisis of Europe in general and the Eurozone in

particular not as a crisis caused by different forms of imbalances and public debts; increasing public deficits were the effect rather than the cause of the crisis (Becker and Jäger 2010). Yet there exist strong evidence, as presented above, that countries of the euro-periphery need strong policies that promote employment and enhance productive labour practices in order to avoid the vicious circle of under-employment, labour diminishment and devaluation. According to many (Becker, Jäger and Weissenbacher 2015), in the case of the Greek economy, structural weaknesses are ascribed to inherited peripherality patterns, dated from the country's semi-Fordist industrialisation, that have not been eliminated despite intense restructuring processes since the 1980s, that have paved the country's EU and Eurozone integration.

Overall, joblessness is a problem affecting the community as a whole, and therefore requires the coordination of the local labour surplus with institutional and business organizations in order to claim back the right to work, and upgrade local development structures (Huang 2010, Barnsley & Diana 1992).

References

Atkinson, J. (1987). Flexibility or fragmentation? The United Kingdom labour market in the eighties. *Labour and society, 12*, 87-105.

Bachtler, J. and Davies, S. (2010). «The geography of the crisis in western Europe: national and regional impacts and policy responses». in Financial Crisis in Central and Eastern Europe. Scholar, Warsaw.

Barbieri, P. and Scherer, S. (2009). «Labour market flexibilization and its consequences in Italy» *European Sociological Review* 25/6, pp. 677–692.

Barnsley, J. and Ellis, D. (1992). *Research For Change: Participatory Action Research For Community Groups*. Vancouver: The Women's Research Centre

Becker, J., Jäger, J. and Weissenbacher, R (2015). «Uneven and dependent development in Europe: the crisis and its implications'» in: Jäger, J. and Springler, E. (eds.) Asymmetric Crisis in Europe and Possible Futures. Critical Political Economy and Post-Keynesian Perspectives. Oxon: Routledge.

Becker, J., and J. Jäger (2010). «Development Trajectories in the Crisis in Europe'» Debatte: Journal of Contemporary Central and Eastern Europe 18/1, pp: 5–27

Clauwaert, S. and Schömann, I. (2012). «The Crisis and National Labor Law Reforms: A Mapping Exercise» *European Trade Union Institute,* Working Paper.

Dunford, M. and Greco, L. (2006). «After the three Italies: wealth, inequality and industrial change» In: Royal Geographical Society-Institute of British Geographers Book Series. Blackwells.

Gialis, S. and Tsampra, M. (2015). «The diverse regional patterns of atypical employment in Greece: Production restructuring, re/deregulation and flexicurity under crisis» *Geoforum*, 62, pp. 175-187.

Gomory, R. E., & Baumol, W. J. (2000). *Global trade and conflicting national interests.* MIT Press.

Hadjimichalis, C. (2011). «Uneven geographical development and socio-spatial justice and solidarity: European regions after the 2009 financial crisis» European *Urban Regional Studies* 18/3, pp. 254–274.

Hadjimichalis, C., & Hudson, R. (2014). Contemporary crisis across Europe and the crisis of regional development theories. *Regional Studies*, 48(1), 208-218.

Harvey, D. (2011). The enigma of capital: and the crises of capitalism. Profile Books.

Hassink, R. (2010). Regional resilience: a promising concept to explain differences in regional economic adaptability? *Cambridge Journal of Regions, Economy and Society*. doi: 10.1093/cjres/rsp033

Huang, H. (2010). «What is good action research? Why the resurgent interest?» *Action Research*, 8/1, pp. 93-109.

Kalleberg, A. L. (2000). Nonstandard Employment Relations: Part-Time, Temporary and Contract Work. *Annual Review of Sociology*, 26, 341-365. doi: 10.2307/223448

Karshenas, M. (2007). «Real exchange rates, labor markets and manufacturing exports in a global perspective» In *Globalization and the myths of free trade: History, theory, and empirical evidence*, (ed.) Shaikh. Routledge Frontiers of Political Economy. New York: Routledge.

Krugman, P. R., and M. Obstfeld (2003) International Economics. Theory and Policy. Addison-Wesley World Student Series, Boston

Krugman, P. and M. Obstfeld. (2012). International economics: Theory and policy. 4th ed. Reading, MA:Addison-Wesley.

Martin, R. (2010). Roepke Lecture in Economic Geography—Rethinking Regional Path Dependence: Beyond Lock-in to Evolution. *Economic Geography*, 86(1), 1-27. doi: 10.1111/j.1944-8287.2009.01056.x

Mavroudeas, S. (2014). *Greek Capitalism in Crisis: Marxist Analyses*. Routledge.

OECD, (2009). *OECD Communications Outlook 2005*. OECD Publishing.

Psycharis, Y., Kallioras, D., & Pantazis, P. (2014). Economic crisis and regional resilience: Detecting the 'geographical footprint' of economic crisis in Greece. *Regional Science Policy & Practice*, 6(2), 121-141.

Seretis, S. and Tsaliki, P. (2015). «Absolute Advantage and International Trade Evidence from Four Euro-zone Economies» *Review of Radical Political Economics*, 0486613415603160.

Shaikh, A. (2011). «The first great depression of the 21st century» *Socialist Register*, 47/47.

Theodore, N., & Peck, J. (2014). Selling Flexibility: Temporary staffing in a volatile economy. In J. Fudge & K. Strauss (Eds.), *Temporary work, agencies and unfree labour*. London: Routledge.

Watson, P. and S. Cooke, (2012). «A comparison of Regional Competitive Advantage Measures and Tools for Helping Communities Strategically Target their Economic Development Efforts» *Working Paper*, University of Idaho.

Acknowledgments

This work has been co-funded by European Economic Area grants (EEA Grants, 2009 – 2014) and Public Investments Programme, General Secretariat for Research and Technology of the Ministry of Education and Religious Affairs (Programme Operator).

Through the EEA Grants and Norway Grants, Iceland, Liechtenstein and Norway contribute to reducing social and economic disparities and to strengthening bilateral relations with the beneficiary countries in Europe. The three countries cooperate closely with the EU through the Agreement on the European Economic Area (EEA). For the period 2009-14, the EEA Grants and Norway Grants amount to €1.79 billion. Norway contributes around 97% of the total funding. Grants are available for NGOs, research and academic institutions, and the public and private sectors in the 12 newest EU member states, Greece, Portugal and Spain. There is broad cooperation with donor state entities, and activities may be implemented until 2016. Key areas of support are environmental protection and climate change, research and scholarships, civil soci- ety, health and children, gender equality, justice and cultural heritage.

International Initiative for the Promotion of Political Economy

LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

To: **Dr. Stelios Gialis**
Department of Geography
University of Aegean

29 February 2016

Dear Stelios Gialis,

We are pleased to inform you that we have accepted your paper, "Regional industrial mix, specialization & underemployment across Greek regions: estimating the harsh impact of austerity based on location quotient analysis" and would like to invite you to present it at the 7th annual conference for the International Initiative for the Promotion of Political Economy (IIPPE), hosted by the School of Economics and Management (*Instituto Superior de Economia e Gestão*), University of Lisbon, 7-9 of September.

This is a major international conference, with over two hundred speakers, between panels and plenary sessions, and an overall audience of up to four hundred. We are unfortunately unable to provide any financial support for your attendance, and hope it will be possible for you to receive funds from other places to attend the conference.

Please feel free to contact us for any further information and documentation on (insert the contract details of the person responsible).

We look forward to see you at the conference.

Yours Faithfully,

Alfredo Saad Filho
On Behalf of the Local Organising Committee