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Composite indicators of flexibilization across EU regions: a critical re-appraisal and interpretation

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Abstract

The aim of the paper is to present a comparative analysis of the diffusion of ‘flexible contractual arrangements’ (FCA) across the European Union (EU). The homonymous FCA Composite Indicator (CI) is calculated for all 200 NUTS II-level regions of France, Germany, the UK, Denmark, Sweden, Belgium, Greece, Italy, Spain, Portugal, Bulgaria and Romania. The CI is calculated for 2005, 2008 and 2011 to present a clear picture of causal effects leading up to, and arising from, the 2008 financial crisis and ensuing recession. A total of eight (8) sub-indicators, grouped into three (3) distinct pillars, are synthesized into the common FCA CI. The novelty of the study lies on that is the first research attempt that accounts for a regional FCA CI by critically re-appraising existent methodology.

The findings depict that the crisis had more intense consequences in certain regions than in others, and thus its effects upon regional labour markets were spatially uneven. As discussed in the paper, such an unevenness runs along, and cuts across, a variety of scales, namely the global, the EU and the intra-EU ones. All regions that are at the top of the FCA CI ranking, namely all Greek and more than half of the Spanish, Portuguese, Bulgarian and Romanian regions, are socio-spatial entities that lack advanced economic and social or welfare structures while at the same time facing important pressures from international and EU competitors. The paper stresses that the search for less rigidity and enhanced employability in labour markets, observed in the official policies of EU and national authorities since mid-1990s or so, reflects an agenda for re-regulating employment protection and security norms according to new accumulation priorities. These trends seem to

exacerbate in the post-2008 period leading poor forms of atypical work and high flexibilization to prevail, especially in the less privileged Southern and Eastern EU regions. Based on the FCA CI findings, the paper ends by arguing that CIs analysis may prove to be useful when not considered as a goal per se; rather, it should be seen as a first step towards in-depth and focused research.

1. Introduction

The aim of this paper is to critically examine the diffusion of work which is not simultaneously full-time and permanent across the regions of the EU. This type of work is prevalent in contemporary labour markets through the use of *atypical*, *precarious* or *flexible* employment forms. Specifically, the paper presents a comparative analysis of the diffusion of ‘flexible contractual arrangements’ (FCA). The FCA CI is calculated for all 200 NUTS II-level regions in France, Germany, the UK, Denmark, Sweden, Belgium, Greece, Italy, Spain, Portugal, Bulgaria and Romania. These countries constitute a representative sample of EU-27 nations as far as the different socio-economic and institutional backgrounds found among member countries are concerned (i.e., they have divergent developmental trajectories and differentiated levels of employment protection and social structures). The CI is calculated for 2005, 2008 and 2011 offering a casual picture of changes due to the effects of the 2008 recession. The findings are, then, analyzed following a critical realist and theoretically informed analysis; and discussed within a wider framework that encompasses certain underlying forces, such as accumulation priorities, that determine changing socio-economic patterns across EU regions.

According to our review of the relevant literature, the study on hand is the first attempt at a regionally-sensitive theoretical and empirical application of CIs in the field of employment flexibilization. It is part of an ongoing research project on the growth of “flexicurity”¹, particularly in regions of the Southern EU. As far as the focus of the study on FCAs is concerned, it should be noted that the European Commission (EC) after discussions with relevant decisive bodies of the member States has come to a common agreement on the four (4) pillars of flexicurity policies, while also underlining the need to monitor these policy components through composite indexes. These four pillars are conceived as policy components of the flexicurity agenda. The first pillar, which is directly connected to employment forms, is that concerning flexible and atypical forms of work.

¹ Flexicurity is a concept adopted by the EU officials, and other labour-policy institutions, from the Nordic experience and corresponds to “a policy strategy that attempts, synchronically and in a deliberate way, to enhance the flexibility of labour markets, work organisation and labour relations on the one hand, and to enhance security – employment and social security – notably for weaker groups, on the other hand” (Wiltshagen & Tros, 2004: 169; EC, 2006 & 2007).

According to the EC, FCAs should be mutually accepted and seen as preserving the interests of both the employees and employers; while they should be institutionalized through modern employment legislation, collective agreements and the changing work organization in sectors and firms (Viebrock and Clasen, 2009). The three other pillars² mainly related to employment security are left out the focus of this paper due to space and NUTS-II level data limitations. This paper, thus, offers an in-depth analysis of trends in employment flexibility (flexibilization) across the study regions.

In the next Section (*Section 2*) a brief literature review on CIs is offered. A methodological framework that can help avoid the limitations and shortcomings of measuring complex phenomena through CIs, as applied in this study, is also proposed. A critical re-appraisal of the steps commonly followed for constructing a CI is attempted in *Section 3*. The eight (8) sub-indicators that were synthesized into the FCA CI are also presented and briefly analyzed. *Section 4* discusses the important inequalities found between EU regions in terms of employment flexibilization as measured through FCA CI values while placing these inequalities in the context of economic restructuring and the effects of the recent crisis upon regional labour markets.

2. Composite indicators: stylized meaningful measures or misleading indexes?

An important number of studies deal with CIs (often named as *indices*) and their wider socio-political significance. The majority of these studies estimate and monitor the innovative and technological capacity of nations (Ledoux et al, 2007; Hudrlikova and Fischer Jakub, 2011). Other important studies perform research on Economic and Human Development through (periodic) calculation of indicators, such as the *Human Development Index* (HDI; United Nations Development Programme, 1990) or *Genuine Progress Index* (GPI; Redefining Progress, 1995). The former has gained important recognition among academics, politicians and citizens, as being a more holistic measure of development when compared to traditional ‘unidimensional’ measures, such as the Gross Domestic Product (GDP); while the latter (GPI) became famous due to its quantification of an ecological notion known as the ‘threshold hypothesis’ which measures the capacity-limit of systems. *Environmental Sustainability* (Esty et al, 2005) and *Sustainable Economic Welfare*

² These are: (i) Lifelong learning (LLL) strategies offering “adaptability” and “employability” to different groups of workers, with a special focus on the excluded or vulnerable ones; (ii) Active labour market policies (ALMP) that help the unemployed get back to work and secure safe transitions from one job to another; and (iii) Modern Social Security Systems (MSS) that provide social protection (e.g. health insurance and care, unemployment benefits etc) and social provisions (e.g. basic education and childcare, facilities that help combine work with familial duties etc).

(Ledoux et al, 2007) CIs are further examples of popular indexes that aim to account for the environmental and socio-economic sustainability, respectively, across the globe.

Certain critiques, either constructive or not, have been raised against the general use and reliability of CIs. Many of these critiques are echoes of the diachronic ontological and epistemological tension that exists between the need for simplification and quantification on the one hand, and the apparent integrative and qualitative character of the phenomena they aim to describe, on the other. Sagar and Najam (1998) argue that the HDI should be re-constructed in order to encapsulate pressing development issues and new socio-economic trends that are not taken into account in its present form. They also call for a re-scaling of the index's methodology, which is currently state-oriented, towards more "globalized" accounts of comparative development. Lawn (2003) underlines that CIs, such as the GPI, require more advanced and robust evaluation methods, as well as they need to incorporate more theoretically sound definitions of notions they measure, such as 'income' or 'capital'.

The lack of statistical transparency observed in several formulations as well as the failure of CIs to incorporate the urban/ regional dimension are additional signs of weakness. Indeed, studies that adopt a regional point of view with regard to CI assessment are relatively few in number³. This is partly because many variables are not available on a sub-national level of analysis, and highlights the fact that contemporary analyses of the socio-economy suffer from a lack of geographical sensitivity. This is also the case in the most representative study of flexicurity CIs that has ever been conducted (see Manca et al, 2010); though it is a well-developed and theoretically coherent work it falls short when taking a closer look at the sub-national level of analysis. Furthermore, certain sub-indicators it uses are in need of critical discussion as they seem to mix divergent types of employment, and the different socio-economic interests associated with them, as will be later shown through the case of solo self-employment.

In the following section a regionally-sensitive empirical application of CIs is performed. Since we are fully aware of the limitations and shortcomings of measuring complex phenomena such as flexicurity through a CI, we placed specific emphasis on the following pre-conditions: i) that our findings are well interpreted after careful consideration of the methodology applied and the analytical sub-indicators used for the calculation; ii) the CI is subject to theoretically informed analysis, and is discussed within a wider framework that encompasses also underlying forces that

³ One of the few exceptions is the work of Floridi et al (2011) on the sustainability of Italian regions.

determine changing socio-economic patterns across the EU; iii) the CI is analyzed under a critical realist perspective⁴ as positivism is certainly not a choice for this study.

3. The FCA CI:

The basic steps commonly followed when a CI is calculated are summarized in a methodological Handbook developed by the OECD/JRC (Nardo et al, 2005). We attempted a critical re-appraisal of these steps, summarized as follows:

3.1 Theoretical Framework

We developed a theoretical framework that substantiates the necessary set of sub-indicators that should be used for the FCA CI (see Gialis, 2014). In brief, wage labour and the employment arrangements are seen as complex phenomena which change according to the evolving necessities of production. Flexibility is understood as an endemic trend in free-market economies which has intensified in the “neoliberal era” (Kalleberg, 2003; Buzar, 2008; McGrath et al, 2010; Bezzina, 2012).

This framework has also been expanded to encompass epistemological issues that help define the limits for the representation of quantitative and qualitative aspects of employment flexibility using CIs. A literature review of sub-indicators as well as methodological choices made in similar studies has also been performed. Several of the issues raised by this theoretical work are discussed in *Section 2* above as well as in the discussion section below. Furthermore, our theoretical choices are reflected by our choice of sub-indicators.

3.2 Selection of the necessary sub-indicators.

Following an analysis of the availability of NUTS-II-level data, measurability of certain aspects of flexible labour and potential relation between the sub-indicators, we decided to synthesize a total of eight (8) sub-indicators into a single common FCA CI. Complete dataseries are provided by Eurostat’s Labour Force Survey (LFS), and there were only a few missing values for the sub-indicators selected. For data that were not immediately available through Eurostat’s official portal,

⁴ In particular, this paper adopts a methodological and ontological viewpoint that acknowledges the pre-existence of social structures, the material base of knowledge (i.e. capitalist production and the search for cheaper labour are profit-driven, and this is true irrespective of subjective opinions on the issue) and the role of human agency. Thus, we understand current flexibilization trends as an outcome of changing accumulation priorities during times of crisis, and seek the causal mechanisms that are of relevance to post-2008 flexibilization trends.

such as the regional share of temporary employment, ad-hoc requests were submitted. The sub-indicators were then grouped into three (3) distinct pillars which, when put together, lead to an estimation of the FCA CI for the three years under study. The pillars and sub-indicators are (*see Table 1*):

Pillar 1: Diffusion of flexible and atypical employment forms

- *Share of employees under a temporary or fixed-term employment over total employees (sub-indicator code: FCA1_1)*. Fixed-term employees, employees under the authority of temporary agencies, as well as those under seasonal employment are included in this category. The higher the share, the greater the flexibility of the labour market under study, and thus the sub-indicator has a positive effect on FCA values. The same applies for all sub-indicators with the exception of the share of permanent employees.
- *Share of solo self-employment over total employment (FCA1_2)*. A problem associated with previous accounts of solo self-employment as a sub-indicator (overcome in this study) was an inability to distinguish between self-employed persons without employees (“solo self-employed” which strongly resemble dependent employees especially when found among the ‘new economy’ sectors and relatively well-educated strata of the population), and the self-employed *with employees* (which can be categorized as employers even though here several differences exist according to the size of the firm they run).
- *Share of family helpers over total employment (FCA1_3)*. This sub-indicator focuses on a type of work that resembles a lot informal employment and used to be, and perhaps continues to be, widespread in Southern EU (Williams and Padmore, 2013).
- *Share of permanent employees over total employment (FCA1_4)*. This sub-indicator focuses on typical or permanent employment. As mentioned above, this sub-indicator is expected to have a negative effect on FCA index as high shares of permanent employment are considered to decrease flexibility in labour market.

Pillar 2: Diffusion of flexible and atypical working time practices

- *Hours worked above or below the forty (40) hours standard (FCA2_1)*. The difference between a 40 hour week and usual hours worked, per week, is calculated. The former is a widely accepted and institutionalized threshold that is assumed to remain constant for every region, while the latter depicts working time variability across regions.

- *Average usual working time coefficient of variation (CV) during past four years (FCA2_2)*. This sub-indicator captures the variability in the average hours worked. The coefficient of variation (CV: the ratio of the standard deviation to the mean) of usual hours worked during the past four years (e.g. between 2002 and 2005 for the year 2005 etc) was calculated for each study year. This sub-indicator expresses the diachronic variability in usual hours worked and, thus, flexibilization of working-time patterns.
- *The share of part-time employment over total employment (FCA2_3)*. Part-time work is considered to be a form of internal flexibility, while in many countries it is widely used for hiring employees within the so-called “secondary labour market”⁵ (EC, 2007). As such, it is an employment form that is utilized when both flexibility in working time patterns and labour cost reduction is needed⁶.

Table 1. Pillars and sub-indicators of the Flexible Contractual Arrangements CI

Code	Name of the sub-indicator	Short Description	Regional scale	Source
The diffusion of flexible and atypical employment forms pillar				
FCA1_1	Temporary	Employees under a temporary or fixed-term form over total employees*, (%).	NUTS II	Eurostat & National Agencies
FCA1_2	Self-employment	Solo self-employed over total employment, (%).	NUTS II	Eurostat
FCA1_3	Family helpers	Contributing family workers over total employment, (%).	NUTS II	Eurostat
FCA1_4	Permanent employees	Permanent employees over total employment, (%).	NUTS II	Eurostat
The diffusion of flexible and atypical working time practices pillar				
FCA2_1	Hours worked	Average usual hours worked above or below the 40-hours week.	NUTS II	Eurostat
FCA2_2	Work-time CV	Average usual working time coefficient of variation (CV) during the past four years.	NUTS II	Eurostat
FCA2_3	Part-time	Part-time employment over total employment, (%).	NUTS II	Eurostat
The employment – unemployment nexus pillar				
FCA3_1	Unemployment change	Change of unemployment rate during the past four years, (%)	NUTS II	Eurostat

Data for all sub-indicators available for 2005, 2008 & 2011.

⁵ Unfortunately, available data does not distinguish between part-time employees and employers. The former are often hired for reducing labour costs and flexibilizing working time patterns, as the high involuntary shares of part-time work in many counties declare; while the latter individuals may run a small business on a personal basis, thus resembling flexible employees, or may be retired firm-owners that continue to work for a few hours.

⁶ This is especially evident in the services and commercial activities of the Southern EU where part-time temporaries tend to be the rule rather than the exception (Gialis, 2011a).

* This is the one and only sub-indicator that is calculated as a share of total employees; all other sub-indicator shares are calculated over total employment.

Pillar 3: The employment – unemployment nexus

- *Change of regional unemployment during the past four years (FCA3_1)*. This sub-indicator reveals the change of unemployment during the preceding four years (e.g. the value for 2005 is calculated between 2002 and 2005 etc) and it is used here as a proxy for changes in employment protection. Due to the fact that high values of this sub-indicator signify a de facto increased labour market flexibility, high levels of dismissals and weak protection of those employed, the value of the sub-indicator has a positive sign on the CI. This sub-indicator also represents a more realistic and reflexive index, at least when compared to the OECD's disputable and static measurements of 'employment protection' offered exclusively on a national level.

3.3 Statistical analysis, testing and pre-calculation considerations.

Correlations among sub-indicators were calculated in order to identify redundant indicators and to remove them from the calculation of the CI. A general rule was applied before removing an indicator that was highly correlated with another, by ascertaining whether or not both indicators can represent the same phenomenon under consideration. In cases where two indicators are highly correlated but represent different phenomena then neither can be considered to be redundant. For example, in the study regions, permanent employment has a high negative correlation with self-employment. This is easy to explain as a high percentage of permanent employment leads to a small share of self-employment within a labour market. Yet, both indicators were retained as they represent largely different phenomena and capture different aspects of flexibility.

Following this, we checked the effect of data gaps (although this was limited). Then, the values of all sub-indicators were normalized in order to be comparable. For this purpose, standardized z-score values⁷ were calculated since robust methods exist for estimating the role of outliers on the synthesized CI (e.g. indicators with high values have a proportionally larger impact on the final

⁷ The z-score of each region is calculated through the following formula: $z_{rt} = (X_{rt} - \mu_t) / \sigma_t$ where X_{rt} is the value of the region, μ_t is the mean for all regions, σ_t is the standard deviation, and z_{rt} is the z-score for region r and year t. When a region has a negative or positive z-score then its performance is below or above the mean in relation to the sub-indicator's mean. The larger the z-score, the higher the performance of the region; and the vice-versa. Values well above ± 1 (e.g. ± 2 , ± 3) can be considered to be outliers. This is because, under the assumption of a large population following normal distribution, approximately 68% of z-score values lay between -1 and 1, and about 99% lie between -3 and 3 according to the Central Limit Theorem.

index). We wish to reiterate that, methodological details aside, our main intention is to highlight those regions that do or do not perform well in terms of flexibility as measured by the FCA CI.

3.4 Calculation of the CI.

The calculation of the CI by aggregation of the different sub-indicators into a common index that represents the complex phenomenon under study, is described below. The issue of weighting had to be considered at this stage in order to assign importance to certain sub-indicators according to their relevance and role in the theoretical framework. In the absence of other subjective criteria, an equal weighting scheme whereby all sub-indicators within the same pillar are considered to have equal importance and thus participate with the same weight to the CI, was adopted (see Table 2). A linear aggregation method was then applied for each of the study years.

Table 2. Weighting scheme for the Flexible Contractual Arrangements CI

Sub-indicator	Dimension weight & Direction	Description	Sub-indicator	Normalized weight
The diffusion of flexible and atypical employment forms pillar				
FCA1_1	1/4(+)	Employees under a temporary or fixed-term form of employment over total employees, (%).	Temp	0.083
FCA1_2	1/4 (+)	Solo self-employed over total employment, (%).	Self	0.083
FCA1_3	1/4 (+)	Contributing family workers over total employment, (%).	Fam	0.083
FCA1_4	1/4 (-)	Permanent employees over total employment, (%).	Perm	0.083
The diffusion of flexible and atypical working time practices pillar				
FCA2_1	1/3 (+)	Average usual hours worked above/ or below the 40-hours week.	above 40h	0.111
FCA2_2	1/3 (+)	Average usual working time coefficient of variation (CV) during the past four years.	wt_CV	0.111
FCA2_3	1/3 (+)	Part-time employment over total employment, (%).	Part	0.111
The employment – unemployment nexus pillar				
FCA3_4	1/1 (+)	Change of unemployment rate during the past four years, (%).	un_chang	0.333

Data for all 8 sub-indicators available for 2005, 2008 & 2011.

3.5 Communication, visualization and post-calculation considerations.

Due to the inherently synthetic role of the CI, issues such as the robustness and sensitivity of the CI and transparency and decomposition of the data had to be taken into account. In our analysis of the regional values of the FCA CI, we also implemented additional methodologies for normalizing and weighting the data. More specifically, two normalization methods (i.e. “distance from the leader” and “distance from the mean”) and another weighting scheme (i.e. “equal weight for each indicator”) were interchangeably used⁸. The results showed that, compared with the Equal Weighting Scheme described in Section 3.4, changes in the ranking of different regions were not significant and mainly had to do with: i) regions that improved their ranking when a new weighting scheme was used (mainly due to the lower increments in unemployment therein) and ii) regions that moved to lower places due to introduction of new normalization methods that reduced the effect of outliers.

Following our aim to try to capture the totality in relation to its synthesizing parts, instead of simply presenting a ranking of values, some advanced visualization and clustering tools were also used. First of all we created a thematic map of the FCA CI, that pictures the unequal diffusion of flexibilization across the regions for each of the study years (*as in Figures 1a, 1b and 1c*). Then we performed a cluster analysis in order to identify potential spatial clusters of regions having similar values of FCA CI, and thus similar rates of flexibilization.

Most importantly, we needed to identify changes of these spatial clusters taking into account outliers during the study period. For this the “Cluster and Outlier Analysis” tool of Arc-GIS software was used⁹. The results are mapped in *Figures 2a, 2b and 2c*, where statistically significant ($p=0.025$ at the 95% level of confidence using a 2-tail test) clusters and outliers are located: clusters of high values (HH), clusters of low values (LL), outliers in which a high value is surrounded by primarily low values (HL), and outliers in which a low value is surrounded primarily by high values (LH), are pictured for each of the study years.

⁸ Overall, a total of 9 CIs were calculated and the respective rankings were thoroughly compared with the initial calculation.

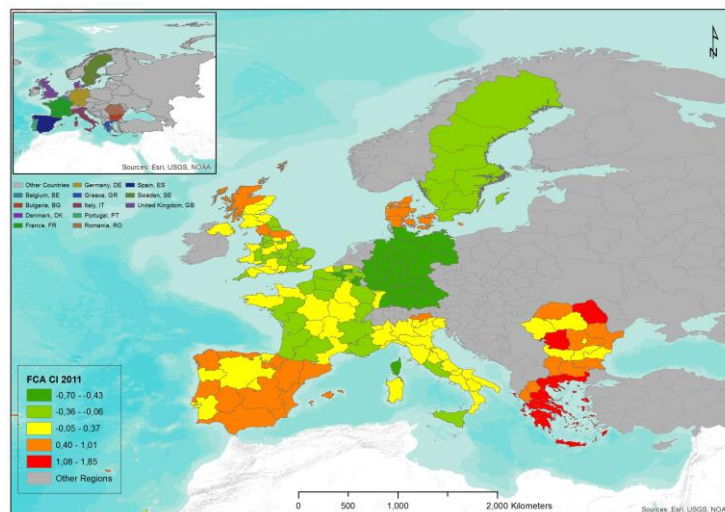
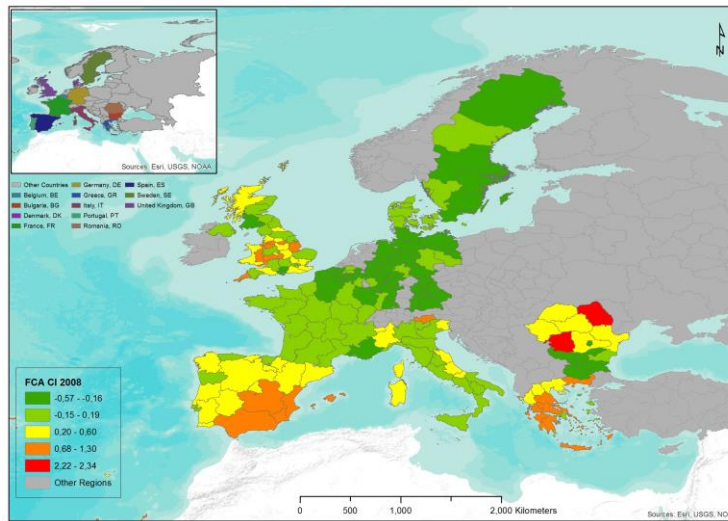
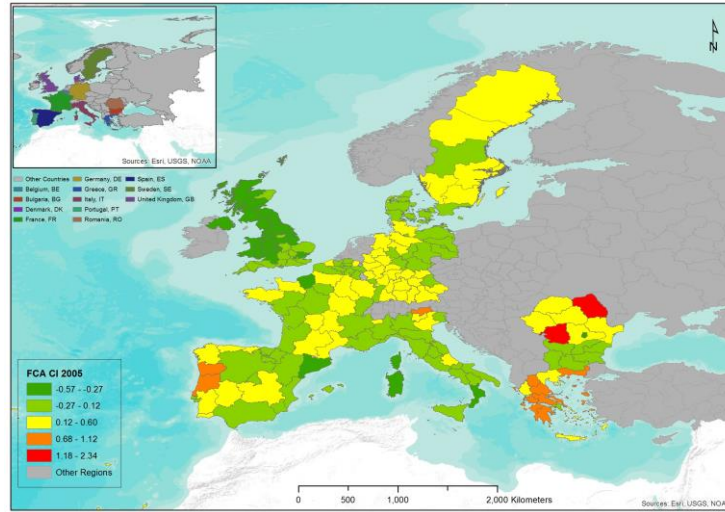
⁹ The tool calculates a Moran’s I-value, a z-score, a p-value, and a code representing the cluster type for each region. The z-scores and p-values represent the statistical significance of the FCA CI values at the 95% level of confidence with a 2-tail test. A positive value for I indicates that a region has neighboring features with similarly high or low attribute values; this region, then, becomes part of a cluster. A negative value for I indicates that a region neighbors with dissimilar regions, in terms of the CI value, and, thus, it is an outlier (ArcGis Resources, 2014).

Table 3, Flexible Contractual Arrangements Composite Indicator (FCA_CI): Fifteen leader and laggard regions, 2011

Fifteen leader				
n.	Code	Region	Country	FCA
1	EL41	Voreio Aigaio	Greece	1.85
2	EL11	Anatoliki Makedonia Thraki	Greece	1.76
3	EL43	Kriti	Greece	1.58
4	EL22	Ionia Nisia	Greece	1.53
5	RO21	Nord-Est	Romania	1.46
6	EL25	Peloponnisos	Greece	1.43
7	EL14	Thessalia	Greece	1.41
8	EL42	Notio Aigaio	Greece	1.32
9	RO41	Sud-Vest Oltenia	Romania	1.30
10	EL24	Stereia Ellada	Greece	1.23
11	EL12	Kentriki Makedonia	Greece	1.20
12	EL23	Dytiki Ellada	Greece	1.17
13	EL30	Attiki	Greece	1.08
14	EL21	Ipeiros	Greece	1.01
15	EL13	Dytiki Makedonia	Greece	0.94
Fifteen laggard				
1	DE73	Kassel	Germany	-0.70
2	DEA4	Detmold	Germany	-0.69
3	DE91	Braunschweig	Germany	-0.68
4	DE94	Weser-Ems	Germany	-0.65
5	DEE0	Sachsen-Anhalt	Germany	-0.64
6	DE80	Mecklenburg-Vorpommern	Germany	-0.64
7	DEG0	Thüringen	Germany	-0.64
8	DED3	Leipzig	Germany	-0.62
9	FR83	Corse	France	-0.61
10	DEA5	Arnsberg	Germany	-0.60
11	DE24	Oberfranken	Germany	-0.60
12	DE71	Darmstadt	Germany	-0.59
13	DED1	Chemnitz	Germany	-0.58
14	DED2	Dresden	Germany	-0.57
15	DEB1	Koblenz	Germany	-0.57

4. Analysis of results and discussion

Unsurprisingly, there exist important inequalities between EU regions in terms of employment flexibilization, measured here in terms of FCA CI values across 200 NUTS-II level socio-spatial entities. What's interesting, though, is that these inequalities seem to have been re-formated and deepened due to the 2008 crisis. Regions of the EU “periphery”, namely all Greek and more than half of the Spanish, Portuguese, Bulgarian and Romanian regions seem to have moved towards higher flexibilization ranking places, while the regions of West-Central EU have fallen and occupy the laggard places of the hierarchy (*see Figures 1a, 1b and 1c*).



Figures 1a, 1b & 1c: Maps of the FCA CI across the study regions, in 2005, 2008 and 2011.

This signifies an exacerbation of unevenness between the EU North and South/ South-East, as the cluster of highly-flexible regional labour markets (mostly concerning Greece, Portugal and Romania in 2005) expands and incorporates most of the Spanish and Bulgarian regions in 2011. During that same period, a cluster of low-flexibility, that didn't exist in 2005, is formed and includes Germany, major parts of Sweden and Belgium along with some French regions (*see Figures 2a, 2b and 2c*).

Regions of Greece are an easy-to-observe and comprise an exceptional case; differences among the regions of the country are lower than they used to be in 2005 and all 13 regions lie at the top-15 of the flexibilization ranking. An intense increase in flexibility is therefore observable for all Greek regions which seem to converge on the higher-end of the flexibility hierarchy across the EU (*as can be seen in Table 3*). While this trend is also evident for the other countries of the EU South, flexibilization in Italy, Spain and Portugal is neither as intense nor as regionally-homogenous as it is in Greece. A strong indication of the way this spatial pattern is evolving is that many Italian and Spanish regions are now at higher ranking places and some other regions in these countries are at lower ranking places than they used to be in 2005/ 2008.

Regions of newly-acceded countries such as Romania and Bulgaria were identified to be subject to controversial dynamics. All regions of Bulgaria have climbed the flexicurity ranking hierarchy and in 2011 are at much higher positions than they were in 2008. The trends for this country were quite the reverse between 2005 and 2008 where all its regions are at lower ranks. In Romania, half of its regions are at higher ranking places in 2011 compared to 2008 while the remaining regions are at lower ranking places. Regions that host the capital city also witnessed increasing flexibility within their labour markets since 2008.

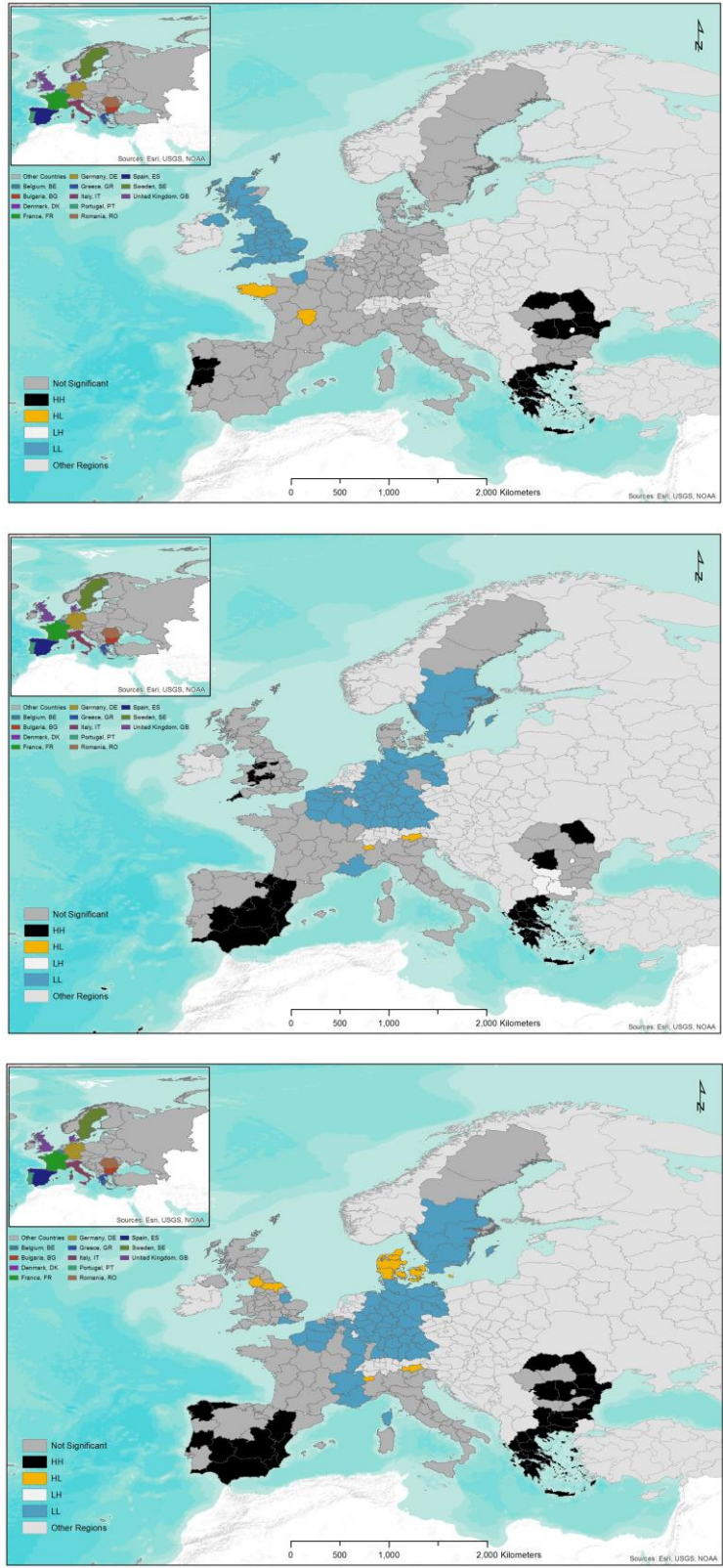
In other words, our findings suggest that the crisis has had more intense consequences in certain regions than in others and, thus, its effects on regional labour markets are spatially uneven and temporally evolving. In order to shed light on the deeper causal mechanisms behind these trends, an appreciation of the uneven development of capitalism and some of its fundamental structures such as labour markets, is of critical importance (McGrath et al, 2010). Such an uneven development runs along, and cuts across, a variety of scales, namely the global, the EU and the intra-EU ones (Markusen, 1996; Massey, 1996). Most regions that occupy the top places of the FCA CI ranking are regions that lack advanced economic and social or welfare structures while, at the same time, facing important pressures from international and EU competitors.

Starting from the global scale, cities and regions of the EU South and the periphery were mainly specialized in producing labour-intensive products such as shoes, garments and textiles. Their important competitive advantage was eventually lost between the mid-1980s and the late-1990s as world-trade agreements and EU regulations acted in favor of imports from countries of the global East and South (e.g. China); causing thousands of industrial plants to foreclose with a dramatic loss of jobs in under two decades (Leontidou, 2006; Gialis, 2011a).

Moving to the EU scale, embedded and deeply-rooted trends of inequality between EU North and South acted in favour of the interests of Northern states and powerful firms therein. Despite the discourse on EU-integration and the thousands of millions of Euros allocated in “structural funds”, unevenness did not stop increasing. The transfer of value from South to North became well-established during the last few decades and has intensified since the introduction of the common currency (Leontidou et al, 2013).

There are scholars that see this intensification and the increase of power asymmetries across EU states as the very reason for the formation of the Eurozone (Hajimichalis and Hudson, 2014). This trend is clearly observable for example through the diachronic trade balance disequilibria across the EU, the (more intense) de-industrialization of many Southern regions, and the “invasion of Northern monopolies” in the Southern economies. It also obvious in the highly uneven levels of employment flexibilization across the EU in the context of the onset of the 2008 crisis (as compared with the FCA CI values for 2005).

As a result of these multi-scalar transformative dynamics, new employment patterns, which are in general terms more flexibilized than the previous ones, were adopted. Following neoliberal imperatives which deified the ability of free markets to continue expanding development, EU and national authorities promoted atypical employment forms through targeted regulatory interventions (Hudson, 2002; Harvey, 2006). Seeking less rigidity and enhanced employability in the labour markets, the authorities re-regulated employment protection and security norms according to the new accumulation priorities. In parallel, historical peculiarities of the Southern regions such as the high rate of atypical and informal employment, and the diminishment of productive structures of the less-developed regions described above, led poor forms of employment flexibility to also expand (Leontidou, 1995; Williams and Padmore, 2013). In other words, different flexibilizing mechanisms related to re-regulation, increasing global competition and de-stabilized modes of social reproduction across different regions, reinforced each other many years before the current crisis even occurred (Buzar, 2008, Gialis, 2014).



Figures 2a, 2b & 2c: Maps of regional clusters and outliers based on the FCA CI, in 2005, 2008 and 2011.

Some regional examples are strongly indicative of these arguments. In certain Spanish and Portuguese regions, the fall in industrial output and vertical-disintegration, led to an expansion of temporary employment. In Spain, this trend was complimented by state intervention that promoted this form of employment. In the Greek capital region, temporary employment increased due to the creation of thousands of fixed-term jobs introduced in the public sector and largely concentrated in the capital city. Temporary employment, especially seasonal contracts, were, and still continue to be, highly expanded in touristic regions such as South Aegean in Greece, Andalusia in Spain, and the Algarve in Portugal. Seasonal arrangements, in many cases of an informal character, are also widespread among the immigrants that live in work in regions of the Southern EU (Leontidou, 2006; Gialis, 2011b).

A final note that the authors of the paper would like to communicate is that, in terms of methodology, indicators can be meaningful when properly built, tested for their sensitivity and robustness, and well presented. Specific emphasis should be paid, in particular, to robustness by seeking to highlight and explain changes in a range of regional rankings when different weightings schemes, normalization rules and aggregation schemes are adopted or applied. Following Hoskins and Mascherini (2009, p460) we argue that the calculation and analysis of CIs should not be considered as a goal per se; rather, it should be seen as a first step towards more in-depth and focused research which may trigger discussion inside and beyond the walls of academia related to social action and political intervention in the face of increasing flexibilization.

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