

MAPPING THE SECTORAL CONCENTRATION OF THE WORKFORCE ACROSS EU REGIONS, 2009-2013

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Abstract

The paper explores the evolution of the sectoral concentration of regional workforces across the EU's 272 NUTS level II territories and 42 territories of associated countries in the wake of the international financial and economic crisis (2009) up to 2013 through the use of location quotients (27.5 thousand computations). Bird's eye views of the findings, in the form of maps, are attached.

Keywords: Territorial sector concentration, location quotient, specialization and localization, regional workforce, EU

JEL classification: R12

1. Introduction

The paper studies the evolution of sectoral concentration across EU regions in the wake of the international financial and economic crisis, from 2009 (i.e., the time the crisis reached the EU affecting a recession (EU, 2009)), up to 2013, the last year for which data exist.

As the subnational (regional) economies of the EU's member states now operate under an ever more unified legislative, trading and development funding framework, and the connectedness of the world's economies grows very quickly, there are probably more reasons to engage in such studies compared to the past. The issue has been researched in several occasions, for instance in connection with the EU's enlargements (Mora et al., 2004). The consensus was that sectoral concentration (and relocation) in Europe seemed to be a slow and multifaceted process that did not leap out from the statistical data (e.g., Brülhart and Traeger, 2005; and the studies cited therein). Yet, taking a fresh look at the data, especially as they become more complete and exploring the patterns may yield new insights.

Indeed, the EU's statistical office, Eurostat, now supplies annual sectoral employment and other statistics at the NUTS II level¹ from not only the 28 member states (i.e., 272 regions), but also several candidate or free trade association countries as well (i.e., 42 additional regions). This allows the computation of the analytical statistic which measures a region's sectoral concentration relative to a larger geographic unit, namely, the location quotient (LQ), in the case of both 272 and 314 regions (involving 12,679 and 14,739 computations, respectively). It is like taking simultaneous snap shots from different distances: one from across the EU, another from across the EU and several associated countries.

The rest of the paper is organized as follows: Section 2 discusses the data and method, Section 3 supplies the findings, and Section 4 the conclusions.

¹ The *Nomenclature des Unités Territoriales Statistiques* (NUTS) is the three-tier hierarchical structure used in the EU to standardize territorial units. The population thresholds of NUTS I level range from 3 to 7 million, for NUTS II from 0.8 to 3 million; however the guidelines are not applied rigidly.

2. The location quotient and the localization and specialization coefficients

The LQ is a good starting point for understanding the regional economy: the uniqueness and characteristics of different regions. It quantifies how concentrated in terms of some economic feature or asset (earnings, GDP; jobs in a sector hereinafter) a particular region is compared to a larger reference unit (often the national or federal average; here the EU). It is computed as a sectoral share of a regional employment divided by the sector's share of the national (here, European) total for the same statistic (Isard, 1960):

$$LQ_{ij} = \frac{\text{sectoral employment (i) in region j} - \text{total employment in region j}}{\text{sectoral employment (i) in all regions} - \text{total employment in all regions}} \quad (1)$$

or

$$LQ_{ij} = \frac{\text{sectoral employment (i) in region j} - \text{sectoral employment (i) in all regions}}{\text{total employment in region j} - \text{total employment in all regions}} \quad (2)$$

It takes values from zero to above one. (In theory, there is no upper limit.) For example, a LQ of 1.0 in mining means that the region and the EU are equally concentrated in mining; while an LQ of 1.8 means that the region has proportionally more miners, i.e., a higher concentration in mining than the EU.

A minor rearrangement of the components entering expression (1) provides additional insights: Subtracting the ratio of the denominator from the ratio of the numerator, adding up the positive (or negative) outcomes pertaining to any one sector and dividing the outcome by 100, yields the coefficient of localization. This takes values from zero to one. The highest (lowest) the coefficient is, the more regionally concentrated (non-concentrated) the sector compared to the EU workforce. Likewise, subtracting the ratio of the denominator from the ratio of the numerator in expression (2), adding up the positive outcomes pertaining to any one region and dividing the outcome by 100, yields the coefficient of specialization, vis-a-vis the EU. This also takes values from zero to one. As in the previous case, the highest (lowest) the coefficient is, the more diversified (similar) the regional workforce in terms of economic activities compared to the overall EU workforce.

3. Findings

Table 1a lists the EU regions which display the three highest coefficients of specialization in any one year. These are the Île de France, Southeast Romania, Madrid, Outer London, Berkshire-Buckinghamshire-Oxfordshire. Table 1b provides the coefficients of localization in each sector (economic activity) in any one year. The ten activities are: (1) the primary sector (agriculture, forestry, fishing), (2) secondary sector excluding construction, (3) construction, (4) trade, transport, accommodation, food service activities, (5) information-communication, (6) financial-insurance activities, (7) real estate activities, (8) professional, scientific-technical, administrative, support service activities, (9) public administration, defense, education, human health, social work activities, (10) arts-entertainment-recreation, other service activities (including household and extra-territorial).

It turns out that public administration, as well as the primary and secondary sectors are the most concentrated (and, perhaps, rooted in certain regions); whereas information-communication, financial-insurance activities and real estate are the least concentrated (and, hence, perhaps more footloose and easier to attract).

Table 2 lists the three EU regions which display the highest LQ values in the ten basic economic activities (sectors) monitored by Eurostat in each of the five years under examination. To aid the reader, the relevant regional sectoral and total employment figures are supplied beneath the name of each region. It turns out that the highest concentrations in:

- The primary sector are found in regions of Romania and Greece.
- The secondary sector are found in regions of the Czech Republic, Romania and Hungary.
- Construction are found in regions of France, Slovakia, Portugal, Italy and Spain.

- Trade, transport, accommodation, food service activities are found in regions of Greece and Spain.
- Information-communication are found in regions of the UK, the Czech Republic and Sweden.
- Financial-insurance activities are found in Luxembourg and regions of the UK.
- Real estate are found in regions of the Czech Republic, the UK, France, and in Latvia.
- Professional, scientific-technical, administrative and support services are found in regions of the UK, Sweden and Germany.
- Public administration, defense, education, human health, and social work activities are found in regions of Spain, Belgium and Sweden.
- Arts-entertainment-recreation and other service activities are found in regions of Belgium and Italy and in Luxembourg and Cyprus.

However, if a broader perspective that includes the regions of a number of associated countries (namely, Iceland, Norway, the Former Yugoslav Republic of Macedonia, Switzerland, Turkey) is considered, then (see Table 3) a somewhat different picture emerges; and the highest concentrations in:

- The primary sector are found in regions of Turkey and Romania.
- The secondary sector are found in regions of Turkey, Romania, and the Czech Republic.
- Construction are found in regions of France, Turkey, Portugal, Slovakia, Spain and Italy.
- Trade, transport, accommodation, food service activities are found in regions of Greece and Spain.
- Information-communication are found in regions of Norway, the Czech Republic, the UK and Sweden.
- Financial-insurance activities are found in Luxembourg and regions of the UK and Switzerland.
- Real estate are found in regions of the Czech Republic, the UK, France, and in Latvia.
- Professional, scientific-technical, administrative and support services are found in regions of the UK, Sweden and Germany.
- Public administration, defense, education, human health, and social work activities are found in regions of Spain and Norway.
- Arts-entertainment-recreation and other service activities are found in regions of Turkey, Belgium, Italy, and in Cyprus.

To visually aid the reader two sets of colored maps (maps 1-5, and 6-10) at the LQ threshold of 1.6 are provided in the Appendix. (At lower thresholds the complexity of the maps increases.) Both show considerable diversity at the subnational level: shapes and contours that do not follow (match) the national borders; in some cases the patterns are stable in others they are not, thus supplying examples of sectoral stability and mobility (relocation) over time. In addition, a close comparison between two snap shots taken in any given year reveals that the notion of concentration is relative. Once the outlook is broadened and Turkey and other countries are taken into account and included in the picture, then the primary sector workforces in parts of Spain, France, Italy, Croatia, Hungary, Bulgaria, Lithuania, Poland, Finland, that were initially perceived as large, may now fade from the picture.

These results may be useful to both central and regional government policy makers, as well as entrepreneurs to keep in mind.

4. Conclusions

Overall, there is evidence of considerable specialization in certain regions compared to others; as well as evidence of and diversity in the localization of economic activities across the EU. It follows that production possibilities vary and that a number of activities may be more (less) footloose and easier (harder) to attract. In addition, the juxtaposition of simultaneous snap shots from across the (a) EU and (b) EU and several associated countries in terms of regional workforce location quotients shows that the notion of sectoral concentration is quite relative.

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APPENDIX

Table 1: The EU in terms of the coefficients of specialization and localization: 2009-2013

(a) The EU regions with the three highest coefficients of specialization

	2009	2010	2011	2012	2013
Île de France, FR	1	1	1	1	1
Sud-Est, RO	2	2	2	2	2
Madrid, ES	3	5	4	4	4
Outer London, UK	4	4	3	3	3
Berk., Buc., Oxford., UK	7	3	5	5	5

(b) The regional concentration of economic activities across the EU (coefficient of localization) in %

	2009	2010	2011	2012	2013
Primary sector	6.59	6.62	6.67	6.88	6.89
Secondary sector	7.56	7.51	7.56	7.53	7.47
Construction	2.53	2.35	2.11	1.90	1.73
Trade, transport, accommodation, food service activities	4.28	4.22	4.35	4.41	4.19
Information-communication	1.09	1.11	1.12	1.12	1.12
Financial-insurance activities	1.09	1.05	1.09	1.05	1.03
Real estate	0.32	0.34	0.34	0.39	0.40
Professional, scientific-technical, admin., support services	2.14	2.07	1.96	2.04	2.27
Public admin., defense, education, human health etc.	8.00	8.21	8.23	8.05	7.84
Arts-entertainment-recreation, other service activities	1.37	1.42	1.51	1.54	1.61

Table 2: The top three EU regions in terms of the highest location quotient in each sector, along with the respective sectoral and overall employment figures (in thousands of people): 2009-2013

Agriculture, forestry and fishing

	2009			2010			2011			2012			2013	
1	Nord-Est, RO		1	Nord-Est, RO		1	Nord-Est, RO		1	Nord-Est, RO		1	Nord-Est, RO	
	803.1	1,666.1		828.7	1,688.4		846.4	1,731.5		841.5	1,764.3		848.9	1,795.1
2	Sud-Vest Oltenia, RO		2	Sud-Vest Oltenia, RO		2	Sud-Vest Oltenia, RO		2	Sud-Vest Oltenia, RO		2	Sud-Vest Oltenia, RO	
	486.1	1,031.5		483.6	1,016.7		488.1	1,024.1		486.3	1,022.3		437.0	974.3
3	Sud – Muntenia, RO		3	Sud – Muntenia, RO		3	S. & E. Peloponnese, GR		3	S. & E. Peloponnese, GR		3	S. & E. Peloponnese, GR	
	471.0	1,445.1		485.0	1424.8		64.4	214.0		59.6	197.2		62.7	191.3

Secondary sector (except construction)

	2009		2010		2011		2012		2013
1	Severovýchod, CZ	1	Moravskoslezsko, CZ	1	Moravskoslezsko, CZ	1	Vest, RO	1	Vest, RO
	242.6 690.5		188.5 543.5		196.4 540.7		292.1 811.6		304.1 812.4
2	Vest, RO	2	Severovýchod, CZ	2	Severovýchod, CZ	2	Moravskoslezsko, CZ	2	Severovýchod, CZ
	284.0 815.4		238.2 690.3		247.2 688.6		191.4 543.0		244.8 689.5
3	Közép-Dunántúl, HU	3	Vest, RO	3	Strední Morava, CZ	3	Severovýchod, CZ	3	Strední Morava, CZ
	150.9 435.1		269.3 805.4		195.8 550.5		240.7 684.1		190.0 554.2

Construction

	2009		2010		2011		2012		2013
1	Corse, FR	1	Corse, FR	1	Východné Slovensko, SK	1	Východné Slovensko, SK	1	Východné Slovensko, SK
	17.6 89.6		15.3 105.9		74.2 609.9		73.9 614.8		77.3 625.4
2	Açores, PT	2	Açores, PT	2	Valle d'Aosta, IT	2	Valle d'Aosta, IT	2	Valle d'Aosta, IT
	16.5 111.8		15.6 109.7		6.7 56.8		6.6 56.1		6.2 55.3
3	Illes Balears, ES	3	Východné Slovensko, SK	3	Stredné Slovensko, SK	3	Stredné Slovensko, SK	3	Corse, FR
	65 484.3		82.3 608.5		65.8 561.4		65.2 566.4		6.7 61.2

Wholesale and retail trade, transport, accomodation and food service activities

	2009		2010		2011		2012		2013
1	South Aegean, GR	1	South Aegean, GR	1	Canarias, ES	1	Canarias, ES	1	Canarias, ES
	60.3 136.8		52.9 131.4		337.9 768.7		323.2 743.5		310.4 729.7
2	Ionian Isl., GR	2	Canarias, ES	2	South Aegean, GR	2	South Aegean, GR	2	South Aegean, GR
	37.3 87.8		303.2 756.8		51.9 130.7		52.5 80.6		50.7 122.8
3	Canarias, ES	3	Ionian Isl., GR	3	Illes Balears, ES	3	Illes Balears, ES	3	Illes Balears, ES
	308.2 775.0		32.1 82.2		182.9 465.1		190.1 471.8		194.6 475.8

Information and communication

	2009		2010		2011		2012		2013
1	Inner London, UK	1	Praha, CZ	1	Inner London, UK	1	Berk., Buc., Oxford., UK	1	Berk., Buc., Oxford., UK
	116.4 1,509.6		53.8 656.8		134.8 1,535.3		97.9 1,184.8		102.4 1,197.6
2	Praha, CZ	2	Berk., Buc., Oxford., UK	2	Praha, CZ	2	Stockholm, SE	2	Inner London, UK
	50.5 660		85.6 1,139.1		54.8 635.2		88.3 1,106		133.7 1,608.9
3	Berk., Buc., Oxford., UK	3	Stockholm, SE	3	Berk., Buc., Oxford., UK	3	Inner London, UK	3	Stockholm, SE
	87.6 1,146.6		79.6 1,062.5		94.6 1,162.7		123.1 1,562.3		89.3 1,133.4

Financial and insurance activities

	2009		2010		2011		2012		2013
1	Luxembourg	1	Luxembourg	1	Luxembourg	1	Luxembourg	1	Luxembourg
	27.6 217.2		27.3 220.8		28.3 224.8		29.5 236.1		30 238.7
2	Inner London, UK	2	Inner London, UK	2	Inner London, UK	2	Inner London, UK	2	Inner London, UK
	149.6 1,509.6		139 1,409.8		165.5 1,535.3		178 1,562.3		142.9 1,608.9
3	Essex, UK	3	Essex, UK	3	Essex, UK	3	Essex, UK	3	Essex, UK
	64.1 807		62.4 824.8		65.5 838.8		69.1 843.5		63.9 859.4

Real estate activities

	2009		2010		2011		2012		2013
1	Praha, CZ 13 660	1	Praha, CZ 14.4 656.8	1	Devon, UK 12.6 535.7	1	Latvia 23 650.2	1	Praha, CZ 16.8 649.4
2	Languedoc-Roussillon, FR 17.7 909.2	2	Latvia 17.9 850.7	2	Latvia 17.5 861.6	2	Praha, CZ 14.2 647.5	2	Latvia 22.7 893.9
3	Île de France, FR 92.2 5,237.9	3	Île de France, FR 97.5 5,163.9	3	Île de France, FR 104.4 5,203.2	3	Devon, UK 11.3 537.1	3	Highlands & Islands, UK 4.4 224.7

Professional, scientific and technical activities; administrative and support service activities

	2009		2010		2011		2012		2013
1	Inner London, UK 288.8 1,509.6	1	Inner London, UK 286.9 1,409.8	1	Inner London, UK 301.4 1,535.3	1	Inner London, UK 319.5 1,562.3	1	Inner London, UK 332.5 1,608.9
2	Stockholm, SE 188 1,052.4	2	Stockholm, SE 190.9 1,062.5	2	Stockholm, SE 197.3 1,091.3	2	Stockholm, SE 203.8 1,106	2	Stockholm, SE 207.7 1,133.4
3	Berlin, DE 243.3 1,546.8	3	Berlin, DE 251.9 1,564.2	3	Hamburg, DE 146.7 903.6	3	Hamburg, DE 149.5 913.2	3	Hamburg, DE 148.9 934.1

Public administration, defense, education, human health and social work activities

	2009		2010		2011		2012		2013
1	Melilla, ES 11.4 23.1	1	Ceuta, ES 13 26.9	1	Ceuta, ES 14.4 26.6	1	Ceuta, ES 11.5 24.3	1	Ceuta, ES 12.3 25.6
2	Ceuta, ES 14 28.4	2	Melilla, ES 10.5 24.2	2	Melilla, ES 13 26.3	2	Melilla, ES 11.8 25.6	2	Melilla, ES 11.8 24.6
3	Namur, BE 80 184.3	3	Namur, BE 75 188.2	3	Namur, BE 77.4 186.8	3	Namur, BE 79.3 191.2	3	Övre Norrland, SE 95.5 242.2

Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies

	2009		2010		2011		2012		2013
1	Brussels, BE 50.9 403.8	1	Brussels, BE 54.7 410.4	1	Brussels, BE 52.2 413.0	1	Brussels, BE 54.7 420.1	1	Brussels, BE 57.9 412.6
2	Luxembourg 22.2 217.2	2	Cyprus 42.0 395.2	2	Lazio, IT 254.5 2,252.9	2	Lazio, IT 267.5 2,250.1	2	Lazio, IT 245.3 2,207.8
3	Lazio, IT 213.4 2,241.2	3	Lazio, IT 238.5 2,256.6	3	Cyprus 43.8 398.2	3	Luxembourg 25.9 236.1	3	Cyprus 38.8 365.1

Table 3: The top three EU and affiliated regions in terms of the highest location quotient in each sector, along with the respective sectoral and overall employment figures (in thousands of people): 2009-2013

Agriculture, forestry and fishing

	2009		2010		2011		2012		2013
1	Agri etc, TR	1	Agri etc, TR	1	Agri etc, TR	1	Dogu Karadeniz, TR	1	Agri etc., TR
	184.7 303.3		173.1 303.8		185.6 342.6		548.2 1,029.7		206 385.8
2	Dogu Karadeniz, TR	2	Dogu Karadeniz, TR	2	Dogu Karadeniz, TR	2	Agri etc., TR	2	Nord-Est, RO
	573.3 1,077.7		542.1 1,034		529.8 1036		189.5 364.7		848.9 1,795.1
3	Erzurum etc., TR	3	Erzurum etc., TR	3	Nord-Est, RO	3	Nord-Est, RO	3	Dogu Karadeniz, TR
	172.1 347.5		178.4 354.2		846.4 1731.5		841.5 1764.3		438.6 957

Secondary sector (except construction)

	2009		2010		2011		2012		2013
1	Bursa etc., TR	1	Bursa etc., TR	1	Bursa etc, TR	1	Bursa etc, TR	1	Vest, RO
	395.9 1,109.9		429.1 1,139.1		452.6 1,236.5		471.8 1,301.8		304.1 812.4
2	Severovýchod, CZ	2	Moravskoslezsko, CZ	2	Moravskoslezsko, CZ	2	Vest, RO	2	Severovýchod, CZ
	242.6 690.5		188.5 543.5		196.4 540.7		292.1 811.6		244.8 689.5
3	Vest, RO	3	Severovýchod, CZ	3	Severovýchod, CZ	3	Moravskoslezsko, CZ	3	Bursa etc., TR
	284 815.4		238.2 690.3		247.2 688.6		191.4 543		490.1 1,384.7

Construction

	2009		2010		2011		2012		2013
1	Corse, FR	1	Corse, FR	1	Van etc, TR	1	Sanliurfa etc., TR	1	Van etc., TR
	17.6 89.6		15.3 105.9		67.6 497.5		91.4 570.4		78.4 518.7
2	Açores, PT	2	Açores, PT	2	Východné Slovensko, SK	2	Van etc., TR	2	Mardin etc., TR
	16.5 111.8		15.6 109.7		74.2 609.9		70.6 521.4		53.1 373.1
3	Illes Balears, ES	3	Východné Slovensko, SK	3	Valle d'Aosta, IT	3	Východné Slovensko, SK	3	Sanliurfa etc., TR
	65 484.3		82.3 608.5		6.7 56.8		73.9 614.8		90.1 667.6

Wholesale and retail trade, accomodation and food service activities

	2009		2010		2011		2012		2013
1	South Aegean, GR	1	South Aegean, GR	1	Canarias, ES	1	Canarias, ES	1	Canarias, ES
	60.3 136.8		52.9 131.4		337.9 768.7		323.2 743.5		310.4 729.7
2	Ionian Isl., GR	2	Canarias, ES	2	South Aegean, GR	2	Illes Balears, ES	2	Illes Balears, ES
	37.3 87.8		303.2 756.8		51.9 130.7		190.1 471.8		194.6 475.8
3	Canarias, ES	3	Ionian Isl., GR	3	Illes Balears, ES	3	South Aegean, GR	3	South Aegean, GR
	308.2 775		32.1 82.2		182.9 465.1		52.5 131		50.7 122.8

Information and communication

2009		2010		2011		2012		2013	
1	Oslo, Akershus, NO 47.2 609	1	Praha, CZ 53.8 656.8	1	Inner London, UK 134.8 1,535.3	1	Oslo, Akershus, NO 53.5 641.1	1	Berk., Buc., Oxford., UK 102.4 1,197.6
2	Inner London, UK 116.4 1,509.6	2	Berk., Buc., Oxford., UK 85.6 1,139.1	2	Praha, CZ 54.8 635.2	2	Berk., Buc., Oxford., UK 97.9 1,184.8	2	Oslo, Akershus, NO 55.2 645.6
3	Praha, CZ 50.5 660	3	Stockholm, SE 79.6 1,062.5	3	Berk., Buc., Oxford., UK 94.6 1,162.7	3	Stockholm, SE 88.3 1,106	3	Inner London, UK 133.7 1,608.9

Financial and insurance activities

2009		2010		2011		2012		2013	
1	Luxembourg 27.6 217.2	1	Luxembourg 27.3 220.8	1	Luxembourg 28.3 224.8	1	Luxembourg 29.5 236.1	1	Luxembourg 30 238.7
2	Inner London, UK 149.6 1,509.6	2	Inner London, UK 139 1,409.8	2	Inner London, UK 165.5 1,535.3	2	Inner London, UK 178 1,562.3	2	Zürich, CH 73.4 812.1
3	Zürich, CH 64.2 776.8	3	Zürich, CH 67.5 778.2	3	Zürich, CH 70.4 792.6	3	Zürich, CH 76 806.1	3	Inner London, UK 142.9 1,608.9

Real estate activities

2009		2010		2011		2012		2013	
1	Praha, CZ 13 660	1	Praha, CZ 14.4 656.8	1	Devon, UK 12.6 535.7	1	Latvia 23 650.2	1	Praha, CZ 16.8 649.4
2	Languedoc-Roussillon, FR 17.7 909.2	2	Latvia 17.9 850.7	2	Latvia 17.5 861.6	2	Praha, CZ 14.2 647.5	2	Latvia 22.7 893.9
3	Île de France, FR 92.2 5,237.9	3	Île de France, FR 97.5 5,163.9	3	Île de France, FR 104.4 5,203.2	3	Devon, UK 11.3 537.1	3	Highlands & Islands, UK 4.4 224.7

Professional, scientific and technical activities; administrative and support service activities

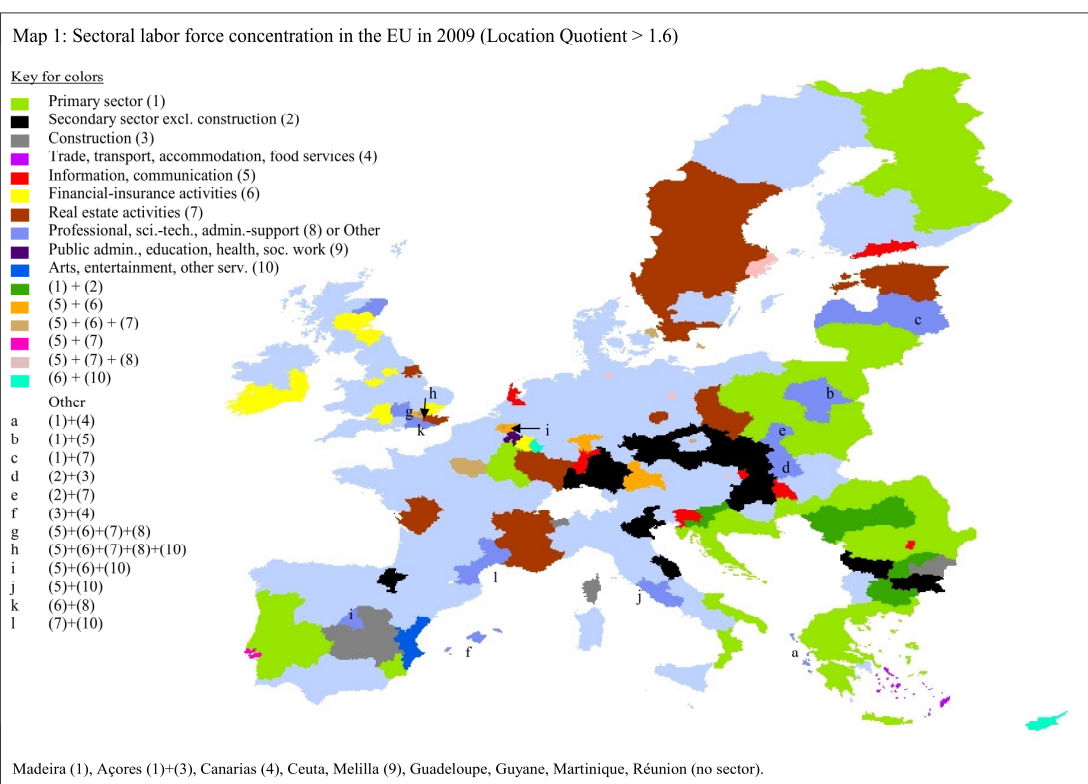
2009		2010		2011		2012		2013	
1	Inner London, UK 288.8 1,509.6	1	Inner London, UK 286.9 1,409.8	1	Inner London, UK 301.4 1,535.3	1	Inner London, UK 319.5 1,562.3	1	Inner London, UK 332.5 1,608.9
2	Stockholm, SE 188 1,052.4	2	Stockholm, SE 190.9 1,062.5	2	Stockholm, SE 197.3 1,091.3	2	Stockholm, SE 203.8 1,106	2	Stockholm, SE 207.7 1,133.4
3	Berlin, DE 243.3 1,546.8	3	Berlin, DE 251.9 1,564.2	3	Hamburg, DE 146.7 903.6	3	Hamburg, DE 149.5 913.2	3	Hamburg, DE 148.9 934.1

Public administration, defense, education, human health and social work activities

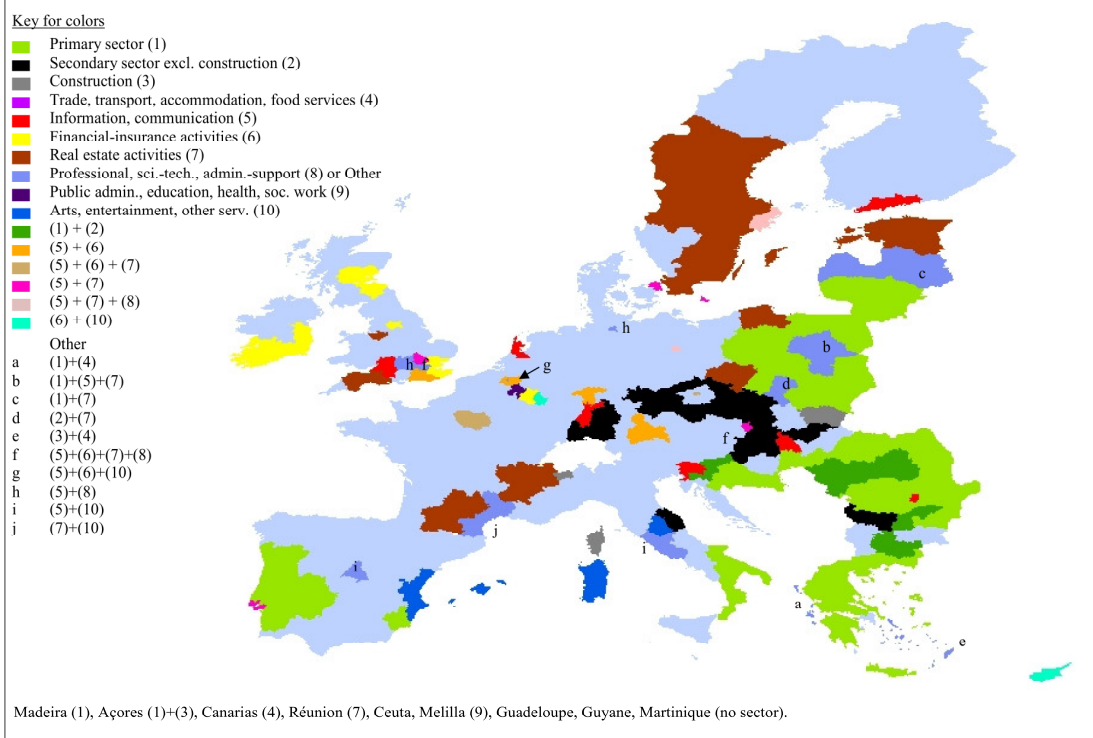
2009		2010		2011		2012		2013	
1	Melilla, ES 11.4 23.1	1	Ceuta, ES 13 26.9	1	Ceuta, ES 14.4 26.6	1	Ceuta, ES 11.5 24.3	1	Ceuta, ES 12.3 25.6
2	Ceuta, ES 14 28.4	2	Nord, NO 100.9 228.8	2	Melilla, ES 13 26.3	2	Melilla, ES 11.8 25.6	2	Melilla, ES 11.8 24.6
3	Nord, NO 100.7 229.1	3	Melilla, ES 10.5 24.2	3	Nord, NO 102.3 232.8	3	Nord, NO 99.5 234.5	3	Nord, NO 96.3 234.6

Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies

	2009			2010			2011			2012			2013	
1	Zonguldak etc., TR		1	Brussels, BE		1	Kastamonu etc., TR		1	Kastamonu etc., TR		1	Brussels, BE	
	82.6	417.4		54.7	410.4		45	324.3		49.8	305.9		57.9	412.6
2	Samsun etc., TR		2	Kastamonu etc., TR		2	Brussels, BE		2	Brussels, BE		2	Lazio, IT	
	164.5	1,005.6					52.2	413		54.7	420.1		245.3	2,207.8
3	Brussels, BE		3	Zonguldak etc., TR		3	Malatya etc., TR		3	Lazio, IT		3	Cyprus	
	50.9	403.8		45.2	378.2		61.6	519.5		267.5	2250.1		38.8	365.1



Map 2: Sectoral labor force concentration in the EU in 2010 (Location Quotient > 1.6)



Map 3: Sectoral labor force concentration in the EU in 2011 (Location Quotient > 1.6)

