

DATA MANUAL

IMMIGRATION AND INNOVATION IN EUROPEAN REGIONS

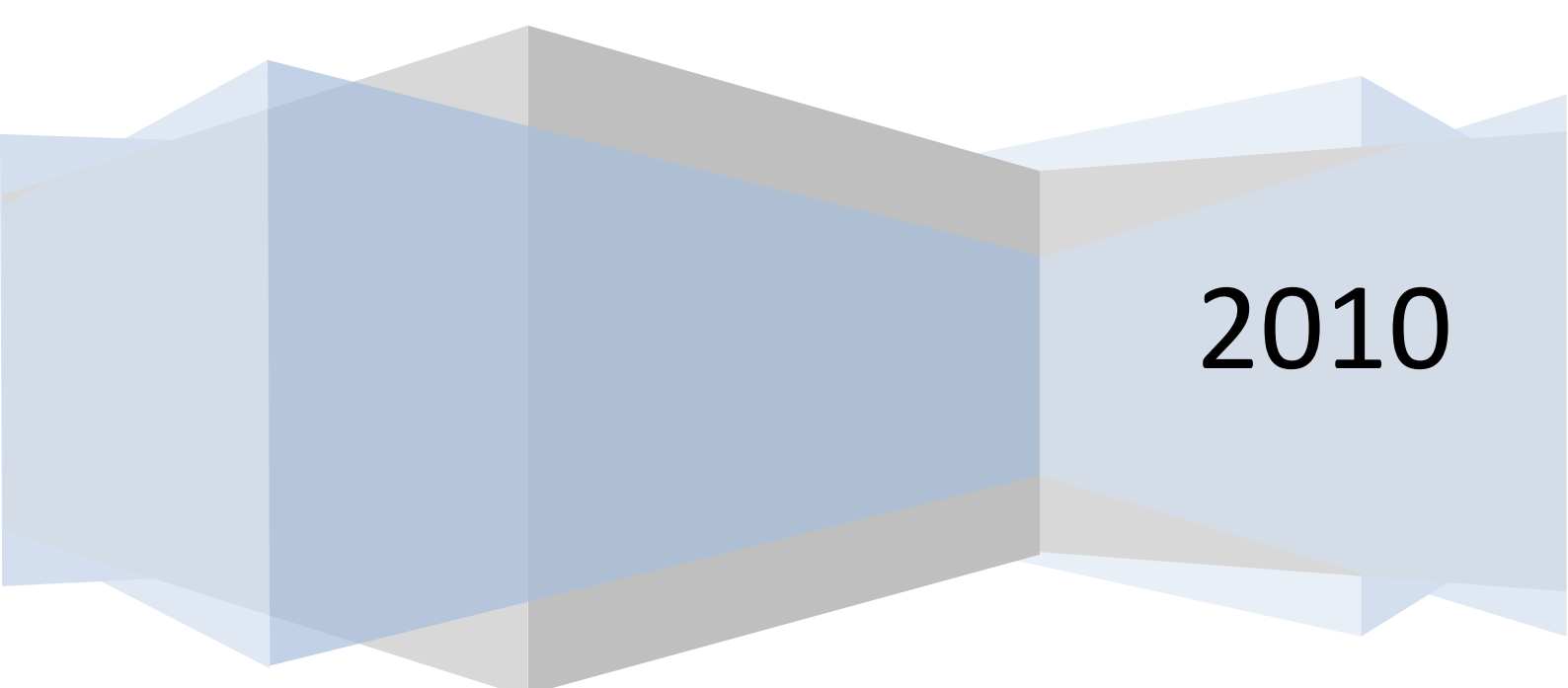
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Version 1 November 2010

**Department of Spatial Economics
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***Migrant Diversity and Regional Disparity in Europe
MIDI-REDIE***

A NORFACE Research Programme



2010

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Introduction

The research project *Immigration and Innovation in European Regions* is part of a 2010-2013 international project on “Migrant Diversity and Regional Disparity in Europe” and funded by NORFACE, see <http://www.norface-migration.org/>.

Preliminary research provided evidence of the impact of migration on regional economic growth and inter-regional income convergence effects. This research used meta-analytic techniques. The results have been published in *Papers in Regional Science* 89(3): 537–561, 2010. It was found that net inward migration is likely to have a positive impact on regional economic growth. Subsequent research aims at uncovering the various mechanisms through which such a positive growth effect can occur. One of these mechanisms is that regional population growth through net inward migration triggers firms to introduce product and process innovations. The research project *Immigration and Innovation in European Regions* develops econometric models in which a causal relationship is being investigated between the presence and characteristics of immigrants in European regions at the NUTS2 level, and innovation outcomes (measured by patent applications) in these regions.

This data manual aims to bring together various relevant data at the regional level in western Europe to increase our understanding of the regional processes behind innovation and the contribution of immigrants in technological change observed in these regions. The dataset prepared for this study includes the following countries: Austria, Belgium, Denmark, France, Germany (western), Ireland, Italy, Netherlands, Portugal, Spain, Sweden and United Kingdom. Other EU countries could not be included in the study because for those countries there are gaps in the availability of the required data, either among the information available from the Eurostat website, but also from other sources. The data are the most recently available, as at June 2010. The dataset is available in both Excel and Stata formats (Final.xls and Final.dta). Even for the included countries, imputation was needed in a number of cases to deal with missing observations. In the excel format it is possible to see the changes that have been made to the original data to generate the final dataset that contains no missing observations. There are also comments added to particular variables where more information will be helpful to the reader.

Most of the dataset is gathered by using the *General and Regional Statistics* database of the Eurostat website. For geographical measures such as the area and accessibility of regions the data have been either gathered from other EU-funded institutions or produced by us. In addition, some data from Oxford Econometrics have been used. A detailed table of data sources is provided at the back of this Data Manual to inform the reader explicitly on the sources of data that were used for each variable. We are grateful to Giovanni Prarolo, the Institute for Employment Research (IAB) in Nuremberg and ESPON for providing data on Italy, Germany and the accessibility index for Europe, respectively.

The data are available to other researchers, provided that the original source is acknowledged. The appropriate citation is: Ozgen, C., van Eijndhoven, E., Nijkamp, P. and Poot, J. (2010). *Data Manual – Immigration and Innovation in European Regions*. Available from the website of the Norface research programme Migration in Europe – Social, Economic, Cultural and Policy Dynamics. <http://www.norface-migration.org/publications.php>

Contents

A. General technical information on NUTS-based regional statistics

B. Detailed information on each variable used in the research

Patent applications

1. Total patent applications per million inhabitants

Population and labour force

2. Population at 1st January
3. Population density
4. Share of the young in the working population
5. Human resources in science & technology

Immigration

6. Share of foreigners in total population
7. Population diversity index

Production structure and performance

8. Specialization in services
9. GDP per capita in 1995 prices (euros)

Geography and instruments

10. Weight matrix based on Euclidean distance
11. Accessibility index
12. Area of the regions
13. The presence of a capital city
14. Location of McDonald's restaurants

Patent sub-classes

15. High-technology patent applications
16. ICT patent applications
17. Biotech patent applications
18. Electricity patent applications
19. Fixed constructions patent applications
20. Physics patent applications
21. Mechanical engineering patent applications
22. Textiles and papers patent applications
23. Human necessities patent applications
24. Performing operations; transporting patent applications
25. Chemicals patent applications

C. List of Regions in the Study

A. General technical information on NUTS-based regional statistics

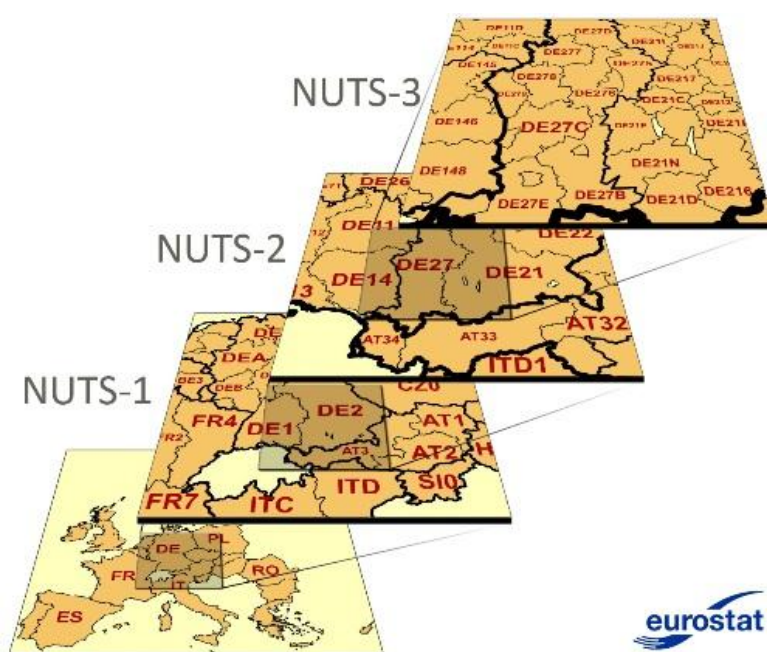
The **Nomenclature of Territorial Units for Statistics**, abbreviated by the acronym **NUTS** (from the French title *Nomenclature des Unités Territoriales Statistiques*) is a geographical nomenclature subdividing the territory of the European Union into regions at three different levels (NUTS 1, 2 and 3, respectively, moving from larger to smaller territorial units). Above NUTS 1 is the 'national' level of the Member State.

NUTS areas aim to provide a single and coherent territorial breakdown for the compilation of EU regional statistics. The current version of NUTS (2006) subdivides the territory of the European Union and its 27 Member States into 97 NUTS 1 regions, 271 NUTS 2 regions and 1303 NUTS 3 regions.

NUTS is based on [Regulation 1059/2003](#) on the establishment of a common classification of territorial units for statistics, approved in 2003 and amended in 2006 by [Regulation 105/2007](#). Two further amending Regulations [1888/2005](#) and [176/2008](#), adopted in 2005 and 2008 respectively, extended the NUTS system to the 10 Member States who joined the EU in 2004 and to Bulgaria and Romania who joined the EU in 2007.

(Further information can be found on the following website:

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:NUTS).



Source: http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction
Accessed on 24th September, 2010.

B. Detailed information on each variable used in the research

1. Total patent applications per million inhabitants

Official Title: Patent applications to the European Patent Office (EPO) by priority year at the regional level

Data source: Eurostat

Eurostat code: pat_ep_rtot¹

Regional Level: NUTS 2, 170 regions

Measurement unit: Total patent applications per million inhabitants

Years: 1990-2007

Code: p

Definition: Total Patents of all International Patent Classification (IPC) sections per million inhabitants

Adjustments made to the data:

In the original Eurostat dataset the data were largely complete. Missing observations between two years (e.g. 1995-1997) were replaced by linearly interpolated values. Where missing observations occurred at the beginning and end years of the data (e.g. 1990, 2007), then they were imputed with values, which were calculated by using compound annual growth rates (CAGR) over the largest possible period of time. For the selection of beginning/end values to calculate CAGR, we used beginning and end years that have no missing observations among the 170 regions.² The values extrapolated with CAGR are presented in orange color in the dataset called Final.xls.

¹ This total **does not** include high-technology, biotechnology and ICT patent applications. Those three are classified separately under high technology sectors. On the Eurostat website, when total patents are searched on the 'Data Navigation Tree' under pat_ep_ripc code, the resulting data values are same as that of pat_ep_rtot. Thus, the total patents are composed of 8 IPC sections and classes (Electricity, Fixed constructions, Physics, Mechanical engineering, Textiles and papers, Human necessities, Performing operations and transporting, Chemicals).

² We applied the same rule to all variables that required CAGR. In general, the calculations are based on data where the number of years between the beginning and end values was not less than 10. The formula used to calculate CAGR is:

$$\text{CAGR} = \left(\frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{\left(\frac{1}{\# \text{ of years}} \right)} - 1$$

Total patent applications per million inhabitants

Summary Table

	mean	sd	min	max
p1990	57.8960	70.7626	0.2200	332.5840
p1991	56.9560	68.2343	0.1982	325.8950
p1992	58.0692	67.8624	0.2330	306.4990
p1993	61.4325	69.5176	0.2397	311.4360
p1994	64.3154	73.4009	0.2467	341.1850
p1995	68.3812	77.6557	0.2539	362.3810
p1996	79.9729	91.9374	0.2612	443.4180
p1997	96.8898	102.0809	0.9150	504.4590
p1998	111.8176	111.8427	0.6880	625.9320
p1999	122.6160	120.9995	0.4320	633.7060
p2000	128.1622	129.0684	0.4315	775.1010
p2001	123.9814	135.4434	0.4310	1010.6710
p2002	123.6408	126.5273	1.2530	804.1280
p2003	124.6588	123.5128	0.9770	784.2100
p2004	131.9546	129.8977	1.4310	763.8700
p2005	133.1047	131.5188	0.8020	696.6360
p2006	134.4833	133.4165	0.3120	720.7160
p2007	84.1353	82.8144	0.3790	413.5190
N	170			

Cross-tab Figure

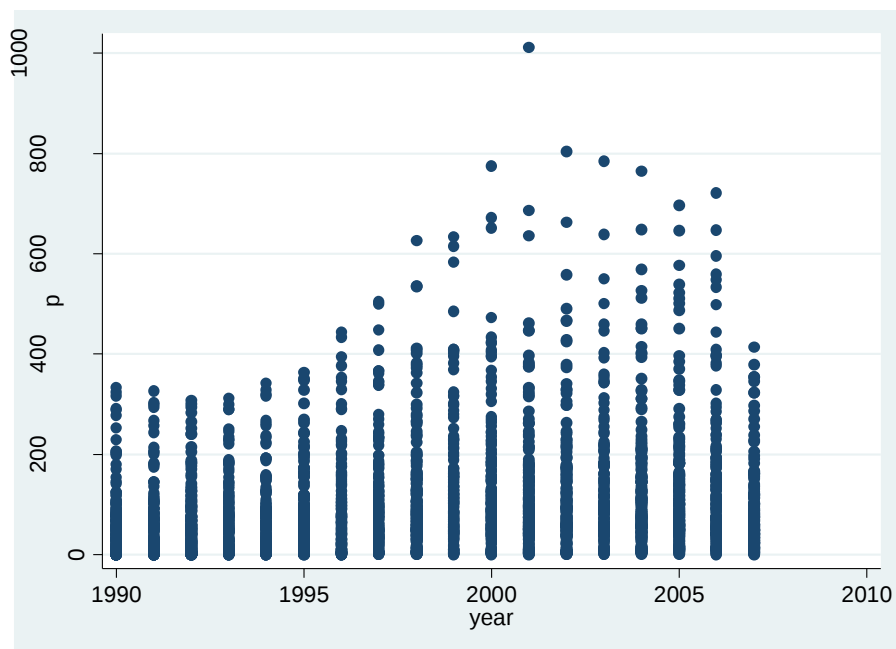
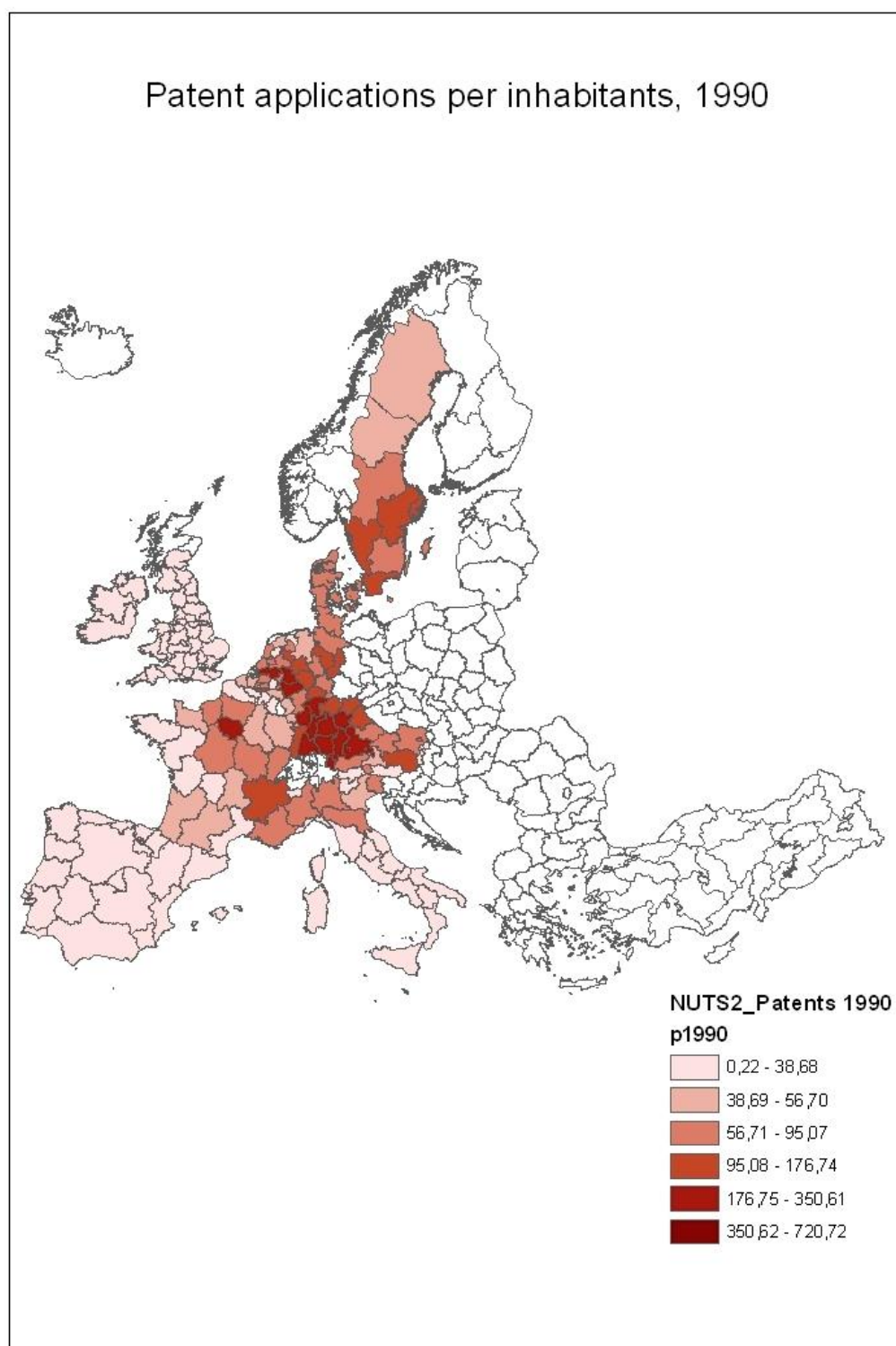
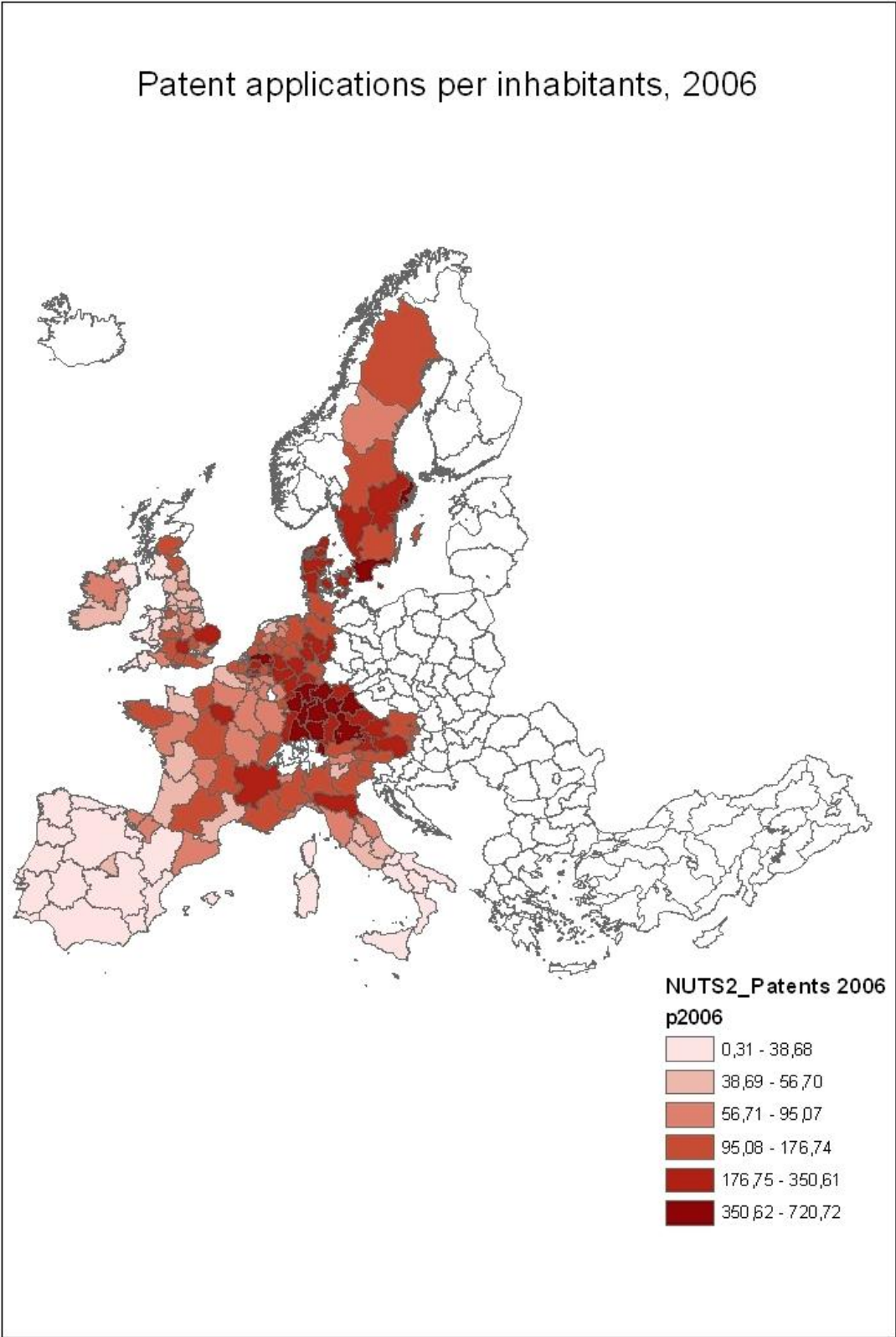


Figure 1: Total patent applications per million inhabitants in 1990³



³ The given classification in Figure 1 is defined with the geometric interval technique in ArcGIS program. This technique is used to classify variables that have highly skewed distribution. First, 2006 patent data is classified and for comparability 1990 data is adjusted to this division.

Figure 2: Total patent applications per million inhabitants in 2006



2. Population at 1st January

Official Title: Population at 1st January by sex and age from 1990 onwards

Data source: Eurostat

Eurostat code: dem_r_d2jan

Regional Level: NUTS 3/NUTS 2

Measurement unit: Level

Years: 1990-2008

Code: jan

Definition: Total population at 1st January of the calendar year

Adjustments made to the data:

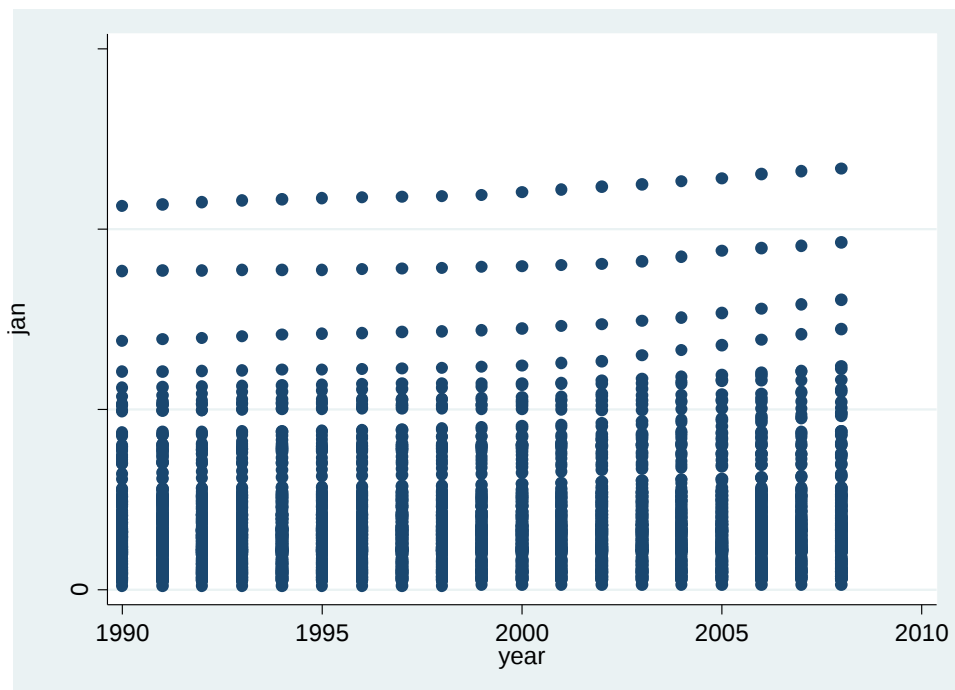
The few missing values in Eurostat data have been replaced by data from the dataset of Oxford econometrics.

Total population at 1st January of the calendar year

Summary Table

	mean	sd	min	max
jan1990	1881510	1561758	114409	10644665
jan1991	1892696	1568593	115275	10695556
jan1992	1901114	1575440	115896	10753276
jan1993	1911406	1582004	116244	10793414
jan1994	1918222	1586105	116389	10833223
jan1995	1923659	1588999	116653	10858975
jan1996	1928939	1592631	117063	10883848
jan1997	1933927	1596299	117588	10895427
jan1998	1938382	1599828	118071	10912622
jan1999	1942958	1604009	118615	10946012
jan2000	1949896	1611304	118861	11020246
jan2001	1957724	1620684	119248	11100523
jan2002	1967871	1630714	119546	11176008
jan2003	1980539	1645689	120909	11250617
jan2004	1993843	1663143	122040	11319972
jan2005	2007275	1681084	122868	11399319
jan2006	2020244	1698221	123978	11532398
jan2007	2032297	1714703	124812	11616500
jan2008	2045892	1731354	125979	11672500
N	170			

Cross-tab Figure



3. Population density

Official Title: Population density

Data source: Eurostat

Eurostat code: dem_r_d3dens

Regional Level: NUTS 3/NUTS 2

Measurement unit: population/km²

Years: 1990-2008

Code: pd

Definition: Total population divided by the total area of the region in km²

Adjustments made to the data:

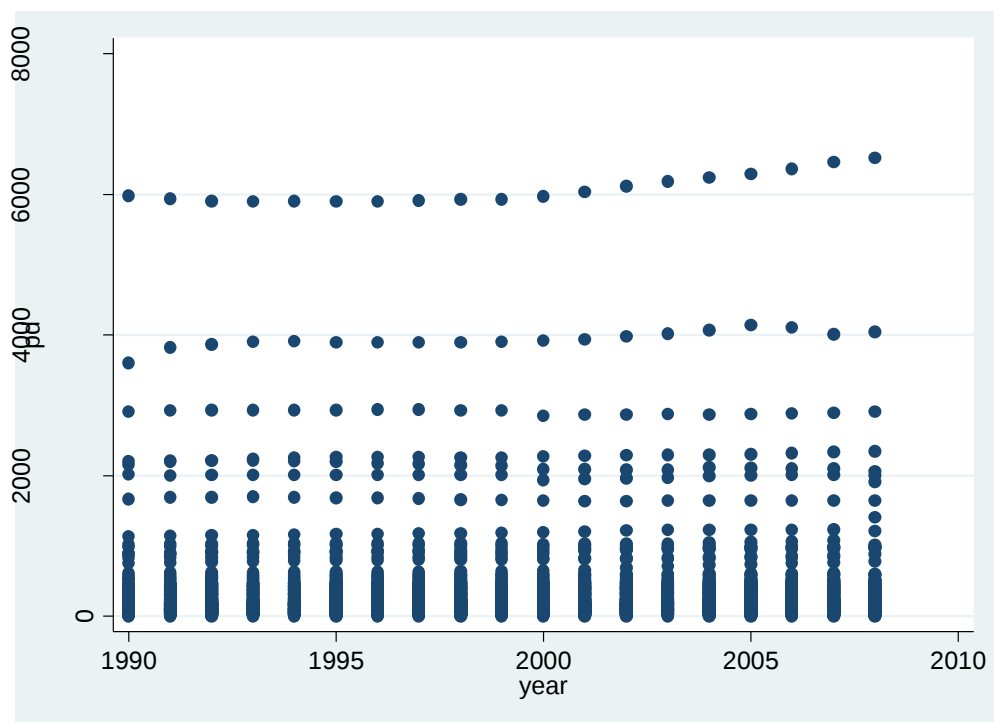
For some countries there were missing values, especially from 1990-1994. The missing values are imputed. It was assumed that the size of the area at 1990 could be used in the case of missing observations, and the 1st January population is then used to create the missing densities. The changes made in the dataset are presented in orange color in the dataset called final.xls.

Total population divided by the total area of the region in km²

Summary Table

	mean	sd	min	max
pd1990	332.6464	642.8099	3.1074	5977.3999
pd1991	335.8401	648.8074	3.1240	5936.5000
pd1992	338.1980	649.2644	3.4000	5905.6001
pd1993	339.7358	650.8166	3.4000	5898.7998
pd1994	340.7535	651.3855	3.4000	5902.5000
pd1995	341.4093	650.7727	3.4000	5899.7002
pd1996	342.1035	650.6674	3.4000	5896.6001
pd1997	342.7661	651.1181	3.4000	5912.2998
pd1998	342.9933	650.9262	3.4000	5927.8999
pd1999	343.6360	651.0059	3.3000	5928.2998
pd2000	342.8642	650.1394	3.3000	5974.2998
pd2001	345.0075	655.0221	3.3000	6033.5000
pd2002	347.1018	661.1116	3.3000	6119.2998
pd2003	349.1676	666.5342	3.3000	6186.1001
pd2004	351.4406	671.4698	3.3000	6231.7998
pd2005	353.3929	677.1484	3.3000	6290.5000
pd2006	354.8465	680.6370	3.3000	6366.5000
pd2007	355.9872	683.0270	3.3000	6458.7002
pd2008	370.9029	701.9717	3.0700	6512.3701
N	170			

Cross-tab Figure



4. Share of the young in the working population

Official Title: Young working population

Data source: Eurostat

Regional Level: NUTS 2

Measurement unit: fraction

Years: 1990-2008

Code: young

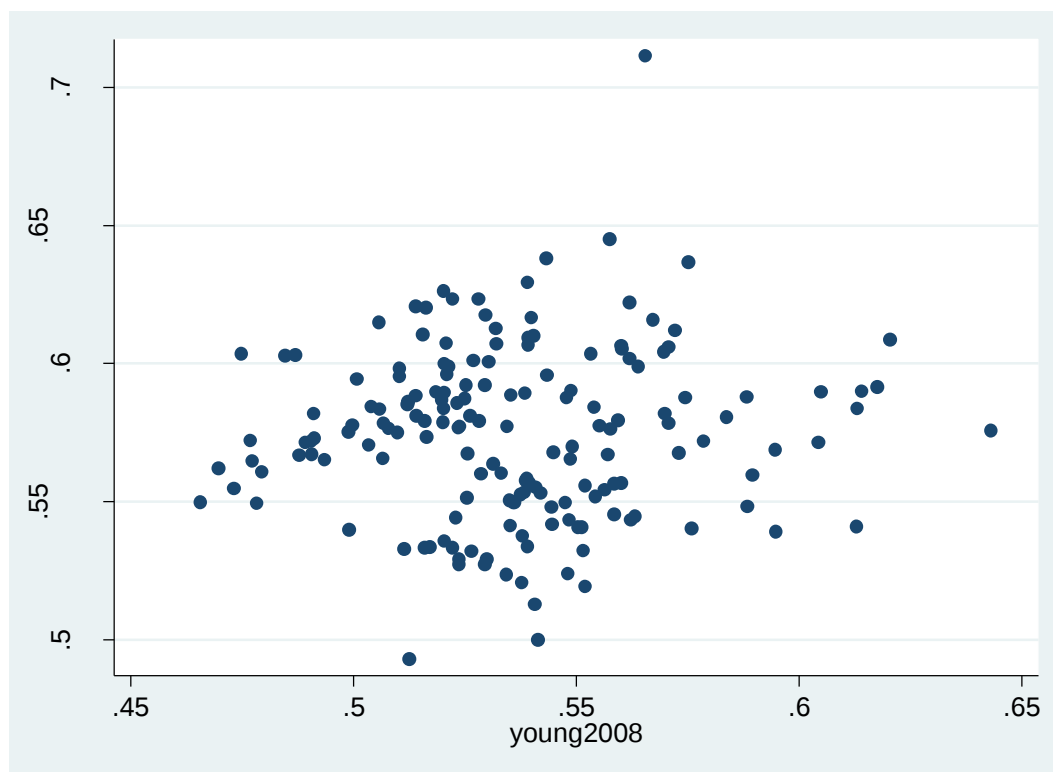
Definition: The fraction of young working population of ages 25-44 divided by the total working population of ages 25-64.

Share of the young in the working population

Summary Table

	mean	sd	min	max
young1990	0.5746	0.0314	0.4900	0.7100
young1991	0.5767	0.0293	0.5000	0.7100
young1992	0.5800	0.0277	0.5000	0.7100
young1993	0.5799	0.0259	0.5000	0.7000
young1994	0.5783	0.0250	0.5000	0.6900
young1995	0.5767	0.0245	0.5000	0.6800
young1996	0.5750	0.0241	0.5100	0.6800
young1997	0.5734	0.0243	0.5100	0.6700
young1998	0.5720	0.0244	0.5100	0.6700
young1999	0.5690	0.0247	0.5000	0.6600
young2000	0.5664	0.0250	0.4900	0.6500
young2001	0.5633	0.0259	0.4900	0.6400
young2002	0.5605	0.0264	0.4800	0.6400
young2003	0.5567	0.0283	0.4800	0.6500
young2004	0.5534	0.0291	0.4700	0.6500
young2005	0.5498	0.0295	0.4700	0.6500
young2006	0.5460	0.0307	0.4700	0.6500
young2007	0.5412	0.0315	0.4700	0.6500
young2008	0.5360	0.0319	0.4700	0.6400
N	170			

Scatter Plot of the share of the young in the working population in 1990 and in 2008



5. Human resources in science & technology

Official Title: Annual data on Human Resources in Science & Technology and sub-groups (NUTS level 0, 1 and 2)

Data source: Eurostat

Eurostat code: hrst_st_rcat

Regional Level: NUTS 2

Measurement unit: Human Resources in Science & Technology fields as percentage of active population

Years: 1994-2009

Code: hr

Definition: Employment in science & technology as a percentage of the economically active population

Adjustments made to the data:

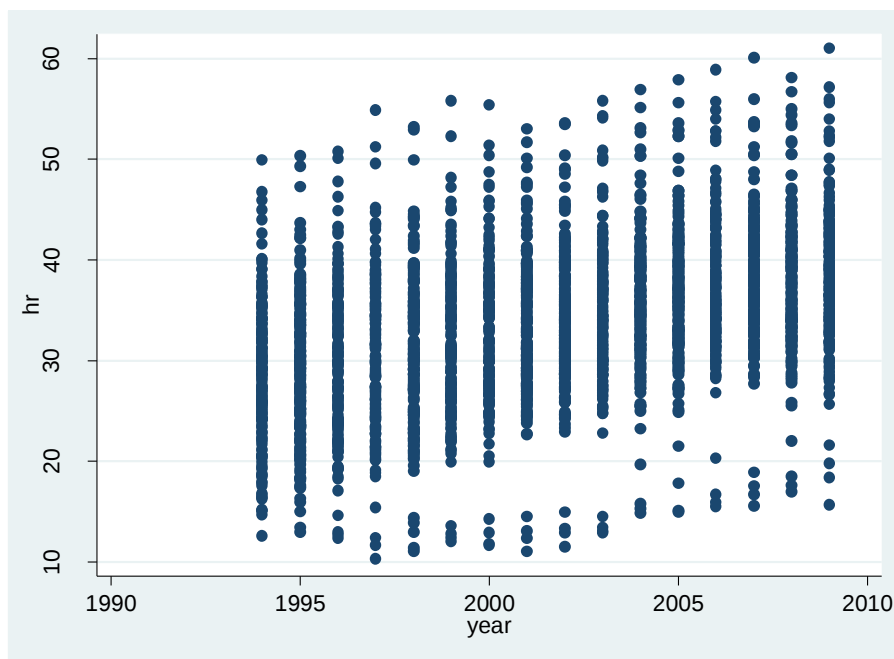
Compound annual growth rates are calculated and replaced the missing observations mostly in years 1994-1995. The imputations made in this variable are presented in orange color in the dataset called final.xls.

Employment in science & technology as a percentage of the economically active population

Summary Table

	mean	sd	min	max
hr1994	28.58128	7.05918	12.58000	49.91047
hr1995	29.17649	7.13584	13.00000	50.33667
hr1996	29.87852	7.29438	12.30000	50.76650
hr1997	30.58132	7.44111	10.30000	54.90000
hr1998	30.94679	7.56550	11.10000	53.20000
hr1999	31.70059	7.26556	12.00000	55.80000
hr2000	32.66000	7.24380	11.70000	55.40000
hr2001	33.30059	7.04596	11.00000	53.00000
hr2002	33.79706	6.94466	11.50000	53.60000
hr2003	34.68824	7.13053	12.90000	55.80000
hr2004	36.14353	6.78078	14.80000	56.90000
hr2005	36.49235	6.90905	14.90000	57.90000
hr2006	37.23118	6.90470	15.50000	58.90000
hr2007	37.88706	6.63002	15.60000	60.10000
hr2008	37.81765	6.85380	17.00000	58.10000
hr2009	38.26886	7.17288	15.70000	61.00000
N	170			

Cross-tab Figure



6. Share of foreigners in total population

Official Title: Population by sex, country of citizenship and indicator of birth

Data source: Eurostat Census, IAB (for Germany), Giovanni Prarolo (for observations in 1991)

Eurostat code: cens_rsctz

Regional Level: NUTS 3/NUTS 2

Measurement unit: Fraction

Years: 1991, 2001

Code: shfor

Definition: Share of foreigners in total population of a region is calculated by using Census data. The data on foreigners by nationalities are used to calculate the share of foreigners in the total population of a region. Once the shares in 1991 and 2001 are calculated, the values between 1991 and 2001 are interpolated linearly by using the values. The summary statistics are presented below.

The number of foreigners in the census

	mean	sd	min	max
frg1991	102356	180484	214	1875589
frg2001	151198	198901	4901	1965021
<i>N</i>	170			

Total census population

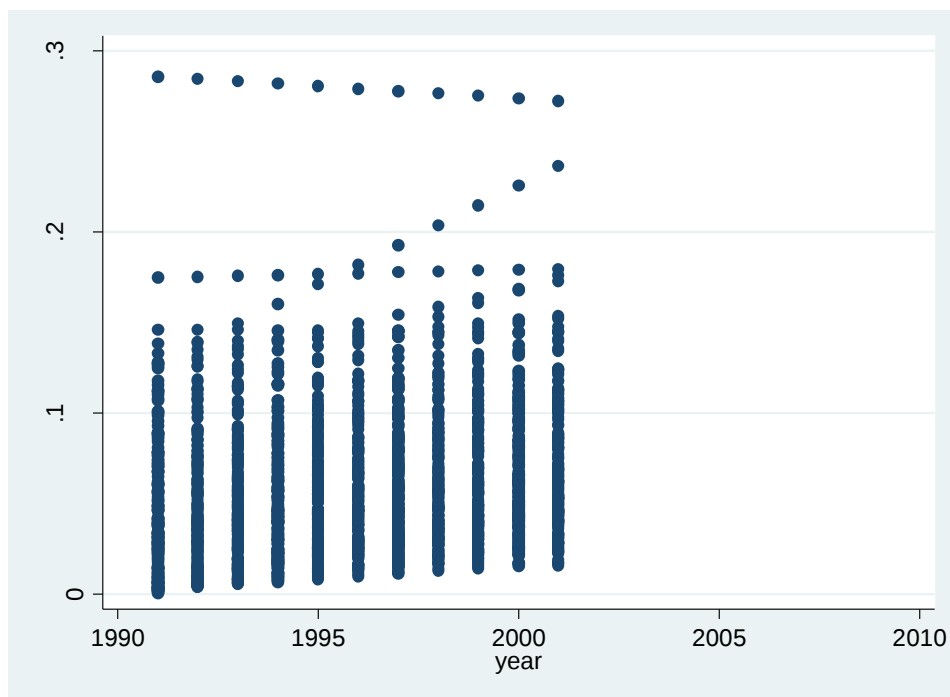
	mean	sd	min	max
tot1991	1921114	1587304	115600	10724900
tot2001	1973221	1625257	119548	10947162
<i>N</i>	170			

Share of foreigners in total population

Summary Table

	mean	sd	min	max
shfor1991	0.048101	0.041645	0.001000	0.286000
shfor1992	0.050693	0.040943	0.004000	0.285000
shfor1993	0.053091	0.040418	0.005000	0.283000
shfor1994	0.055419	0.040041	0.007000	0.282000
shfor1995	0.057812	0.039839	0.008000	0.281000
shfor1996	0.060199	0.039747	0.010000	0.279000
shfor1997	0.062545	0.039861	0.011000	0.278000
shfor1998	0.064944	0.040112	0.013000	0.277000
shfor1999	0.067319	0.040503	0.014000	0.275000
shfor2000	0.069724	0.041035	0.016000	0.274000
shfor2001	0.072093	0.041738	0.016000	0.272000
N	170			

Cross-tab Figure



7. Population diversity index

Official Title: Fractionalization index

Data source: Eurostat (Census 2001).

Eurostat code: dens_rsctz

Regional Level: NUTS 2

Measurement unit: -

Years: 2001

Code: index/index_b

Definition: Own calculations. There are two types of indices used. Firstly, the natives are treated as one of the groups in a region. Therefore, natives are included in the diversity index calculation. Secondly, the compositional diversity among foreigners is calculated. In this case the natives are excluded from the diversity index calculation (index_b). The formula used is *Diversity index* (also called *fractionalization index*) = *1-Herfindal index of nationality shares*. It is calculated as follows:

$$\text{Diversity Index}_j = \text{Div}_j = 1 - \sum_{i=1}^N s_{ij}^2$$

in which s_{ij} is the share of the group i ($i=1, \dots, N$) in region j ($j=1, \dots, R$)

Number of foreigners in 2001 at NUTS 2 level

	mean	sd	min	max
North Africans	10435	30308	25	334822
Other Africans	8551	26609	43	229776
North Americans	2512	4678	29	39945
Other Americans	7020	21049	81	200874
Middle Easterners	1952	3666	7	26029
Other Asians	13818	34501	88	324311
CEE*	8999	14491	213	122406
Other Europeans	97775	137244	3151	1290306
Oceanians	156	391	0	4391
Others	2012	4467	0	42747
Natives	1832601	1480130	114590	8983233
N	170			

*Central and Eastern Europeans

Share of the nationality group and diversity index values in 2001, including natives

Share in population	Mean	sd	min	max
North Africans	0.003919	0.006685	0.000037	0.060774
Other Africans	0.003423	0.007498	0.000105	0.071493
North Americans	0.001289	0.001882	0.000071	0.014438
Other Americans	0.002845	0.005805	0.000095	0.038886
Middle Easterners	0.000891	0.001276	0.000004	0.007692
Other Asians	0.005963	0.010866	0.000201	0.078993
CEE*	0.005176	0.009319	0.000134	0.078965
Other Europeans	0.046728	0.032757	0.008431	0.168966
Oceanians	0.000132	0.000379	0.000000	0.004284
Others	0.001204	0.002054	0.000000	0.015451
Natives	0.928432	0.047023	0.667357	0.984198
index	0.132118	0.078001	0.031218	0.533107
N	170			

*Central and Eastern Europeans

Share of the nationality group and diversity index values in 2001, excluding natives

	mean	sd	min	max
North Africans	0.055915	0.064809	0.000692	0.294005
Other Africans	0.044556	0.048664	0.001557	0.274796
North Americans	0.020287	0.028020	0.001642	0.198773
Other Americans	0.046074	0.082328	0.001572	0.427667
Middle Easterners	0.012316	0.013290	0.000099	0.054890
Other Asians	0.086748	0.111485	0.003683	0.550892
CEE*	0.070292	0.083976	0.003105	0.387183
Other Europeans	0.644531	0.187989	0.210878	0.900832
Oceanians	0.001971	0.004697	0.000000	0.037343
Others	0.017308	0.027657	0.000000	0.211032
indexb	0.494508	0.171882	0.185275	0.805442
N	170			

*Central and Eastern Europeans

8. Specialization in services

Official Title: Specialization in production

Data source: Oxford econometrics

Regional Level: NUTS 3/NUTS 2

Measurement unit: ratio

Years: 1990-2008

Code: smv

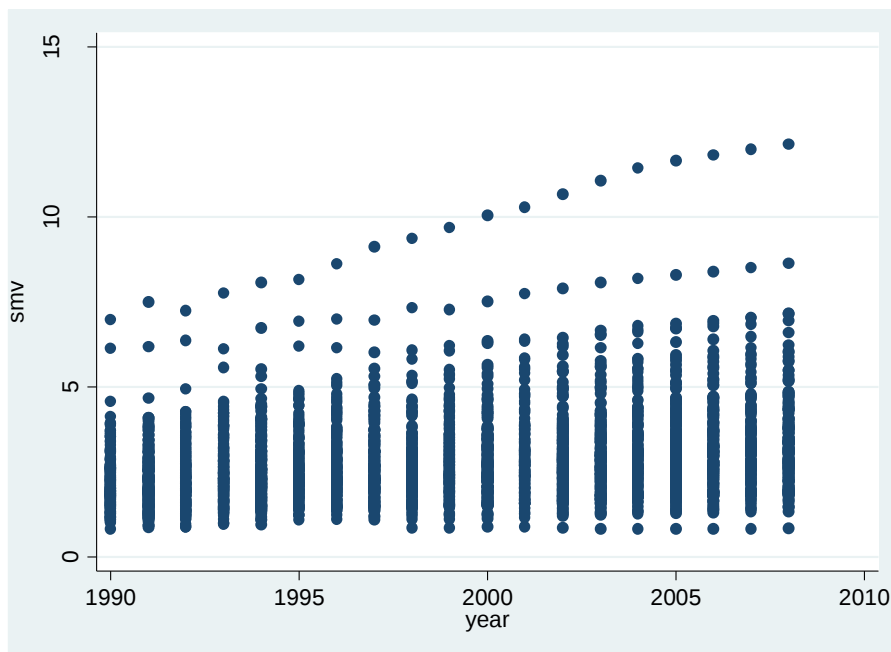
Definition: The ratio of the service sector value added to manufacturing sector value added. So, the higher the value of this variable the higher the specialization in the services sector in a region.

The ratio of the service sector value added to manufacturing sector value added

Summary Table

	mean	sd	min	max
smv1990	2.192660	0.862913	0.833777	6.975931
smv1991	2.269466	0.904927	0.868307	7.497809
smv1992	2.378654	0.937218	0.891911	7.243571
smv1993	2.495618	0.986775	0.961869	7.750195
smv1994	2.580535	1.043563	0.935306	8.068339
smv1995	2.630878	1.053569	1.089119	8.163107
smv1996	2.680388	1.081838	1.092607	8.622379
smv1997	2.719751	1.112290	1.087994	9.123671
smv1998	2.747518	1.149197	0.859505	9.360338
smv1999	2.819684	1.189149	0.866607	9.686213
smv2000	2.864252	1.218365	0.888983	10.045950
smv2001	2.934088	1.260802	0.885531	10.282752
smv2002	3.011262	1.294505	0.859370	10.676169
smv2003	3.098717	1.352630	0.835039	11.074454
smv2004	3.171906	1.381842	0.830039	11.437641
smv2005	3.217749	1.398502	0.827457	11.658656
smv2006	3.268629	1.420549	0.826050	11.815449
smv2007	3.315375	1.439294	0.829751	11.997676
smv2008	3.368666	1.458878	0.836348	12.142330
N	170			

Cross-tab Figure



9. GDP per capita in 1995 prices (million euros)

Official Title: GDP per capita income

Data source: Oxford Econometrics

Regional Level: NUTS 2

Measurement unit: GDP per capita in 1995 prices (Euros)

Years: 1990-2008

Code: gdp

Definition: Gross Domestic Product per capita

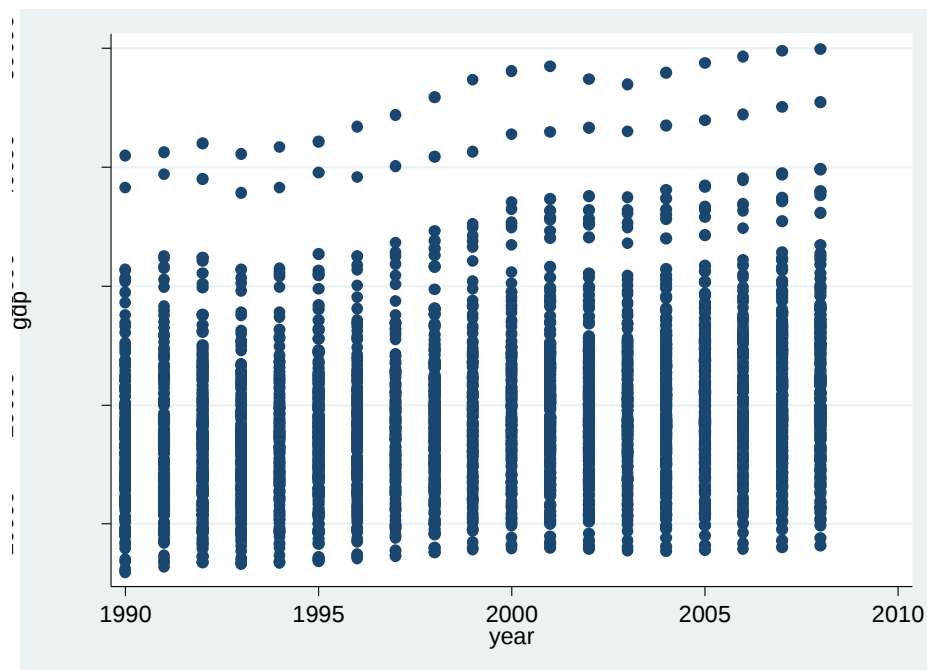
GDP Levels are obtained from Oxford Econometrics in constant 1995 euro values To calculate the per capita GDP, the Jan 1st population from the Eurostat database is utilized. The values presented in the dataset and the table below have been created as follows: $gdp_j = ((GDP\ Level)_j / (1st\ Jan\ population)_j * 1000000)$ where j indicates the region, $j=1, \dots, N$.

Per capita income in 1995 prices (euros)

Summary Table

	mean	sd	min	max
gdp1990	16903	6066	5955	41005
gdp1991	17079	6214	6383	41267
gdp1992	17106	6172	6760	42024
gdp1993	16787	5838	6615	41121
gdp1994	17168	5828	6686	41668
gdp1995	17503	5861	6872	42170
gdp1996	17738	5911	7130	43427
gdp1997	18151	6005	7300	44401
gdp1998	18641	6190	7590	45921
gdp1999	19092	6360	7815	47365
gdp2000	19688	6558	7932	48110
gdp2001	19936	6560	7942	48478
gdp2002	20033	6493	7863	47419
gdp2003	20076	6413	7739	46969
gdp2004	20411	6553	7693	47969
gdp2005	20675	6647	7757	48735
gdp2006	20984	6767	7876	49313
gdp2007	21309	6889	8038	49773
gdp2008	21612	7006	8203	49922
N	170			

Cross-tab Figure



10. Weight matrix based on Euclidean distance

Official Title: Distance based weight matrix

Data source: European Transport Policy Information System (ETIS)

Regional Level: NUTS 2

Measurement unit: km

Years: -

Code: w

Definition: Weight matrix based on Euclidean distance between the centroids of the NUTS 2 regions in km, own calculations. The weights are row-standardized, i.e. the all rows add to unity.

11. Accessibility index

Official Title: Accessibility index

Data source: European Spatial Observatory Network (ESPON)

Regional Level: NUTS 2

Years: 2008

Code: access

Definition: A composite measure of accessibility in a region based on transport infrastructure and market potential. The accessibility index is calculated as follows (ESPON, 2009)⁴:

The accessibility index was provided by ESPON. It is based on an accessibility model that is an improved version of that used in the ESPON 1.2.1 project. The explanation below is a summary of the methodology that is presented in ESPON (2009). The theoretical assumption behind potential accessibility is that the attractiveness of a destination increases with the size of the population and decreases with distance, travel time or cost. Wegener et al. (2002) define the two pillar functions of potential accessibility; *first* is the activity function representing the activities or opportunities to be reached and *second* is the impedance function representing the effort, time, distance or cost needed to reach the destination. These two functions are combined multiplicatively to calculate the potential accessibility:

$$A_i = \sum_j W_j^a \exp(-\beta c_{ij})$$

where A_i is the accessibility of area i , W_j is the activity to be reached in area j , and c_{ij} is the generalised cost of reaching area j from area i . A_i is the total of the activities reachable at all areas j weighted by the ease of getting from i to each area j . The interpretation is that the greater the number of attractive destinations in areas j is and the better areas j are reachable from area i , the greater is the accessibility of area i . However, the aggregation over modes is introduced in the impedance function of the accessibility model by combining the information contained in the modal accessibility indicators by replacing the generalised cost c_{ij} by the 'composite' generalised cost, thus c_{ij} is calculated as follows:

$$\bar{c}_{ij} = -\frac{1}{\lambda} \ln \sum_m \exp(-\lambda c_{ijm})$$

where c_{ijm} is the generalised cost of travel by mode m between i and j , and λ is a parameter indicating the sensitivity to travel cost. This formulation of composite travel cost is superior to average travel cost because it makes sure that the removal of a mode with higher cost (i.e. closure of a rail line) does not result in a - false - reduction in aggregate travel cost.

Adjustments made to the data:

In the ESPON NUTS 2 dataset the 2 Irish regions (BMW and South-Eastern) were not defined separately. Therefore, the accessibility index value of South-Eastern is assigned to region BMW.

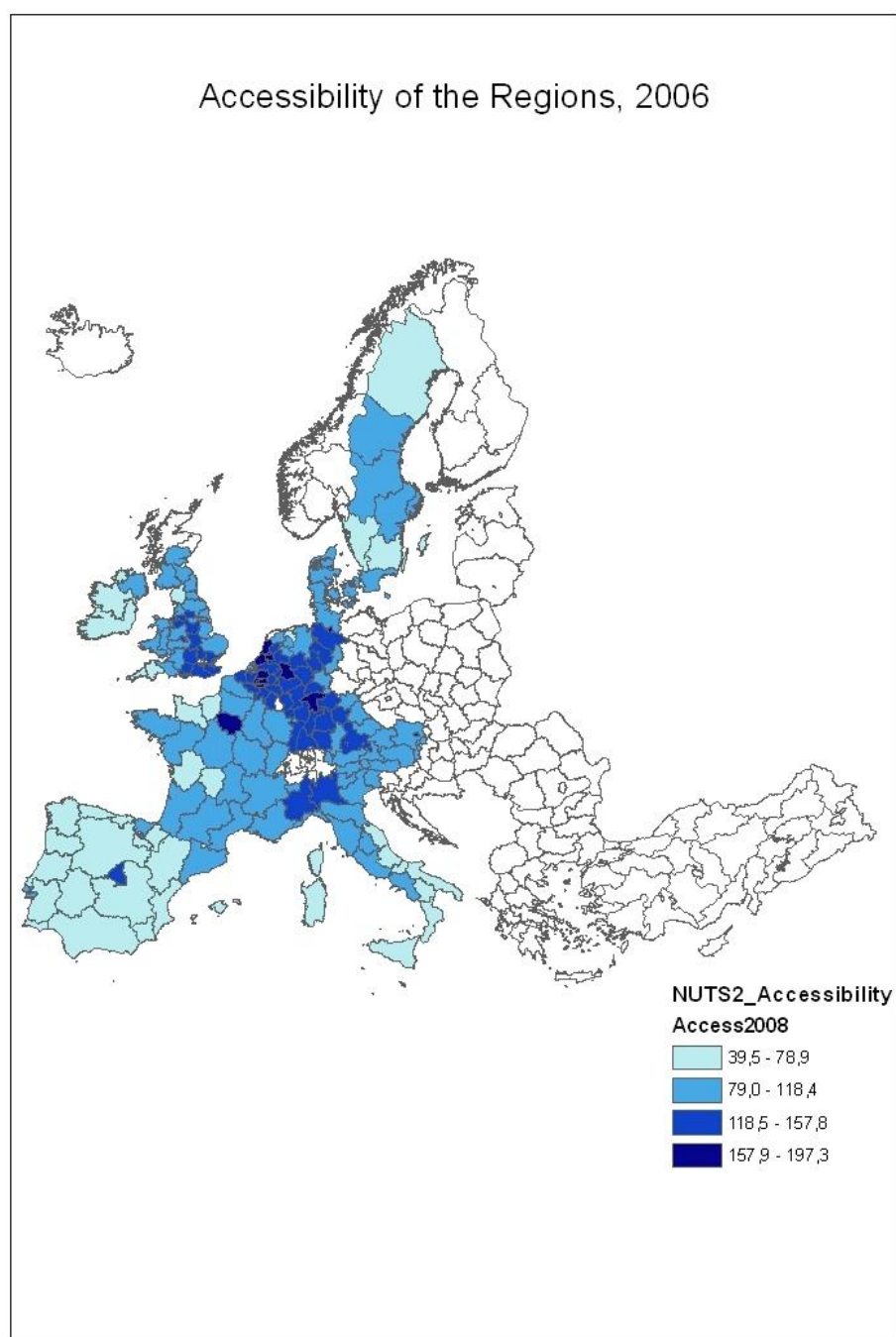
⁴ ESPON, 2009. "Update of Air and Multimodal Potential Accessibility Indicators: Final Report" by Klaus Spiekermann, Spiekermann & Wegener Urban and Regional Research

Accessibility index

Summary Table

	mean	sd	min	max
access2008	104.7737	32.3556	39.4955	197.2744
N	170			

Figure 3: Accessibility of the Regions based on Accessibility Index



12. Area of the regions

Official Title: Area of the regions

Data source: Eurostat

Eurostat code: dem_r_d3area

Regional Level: NUTS 3/NUTS 2

Measurement unit: km²

Years: 1990-2008

Code: area

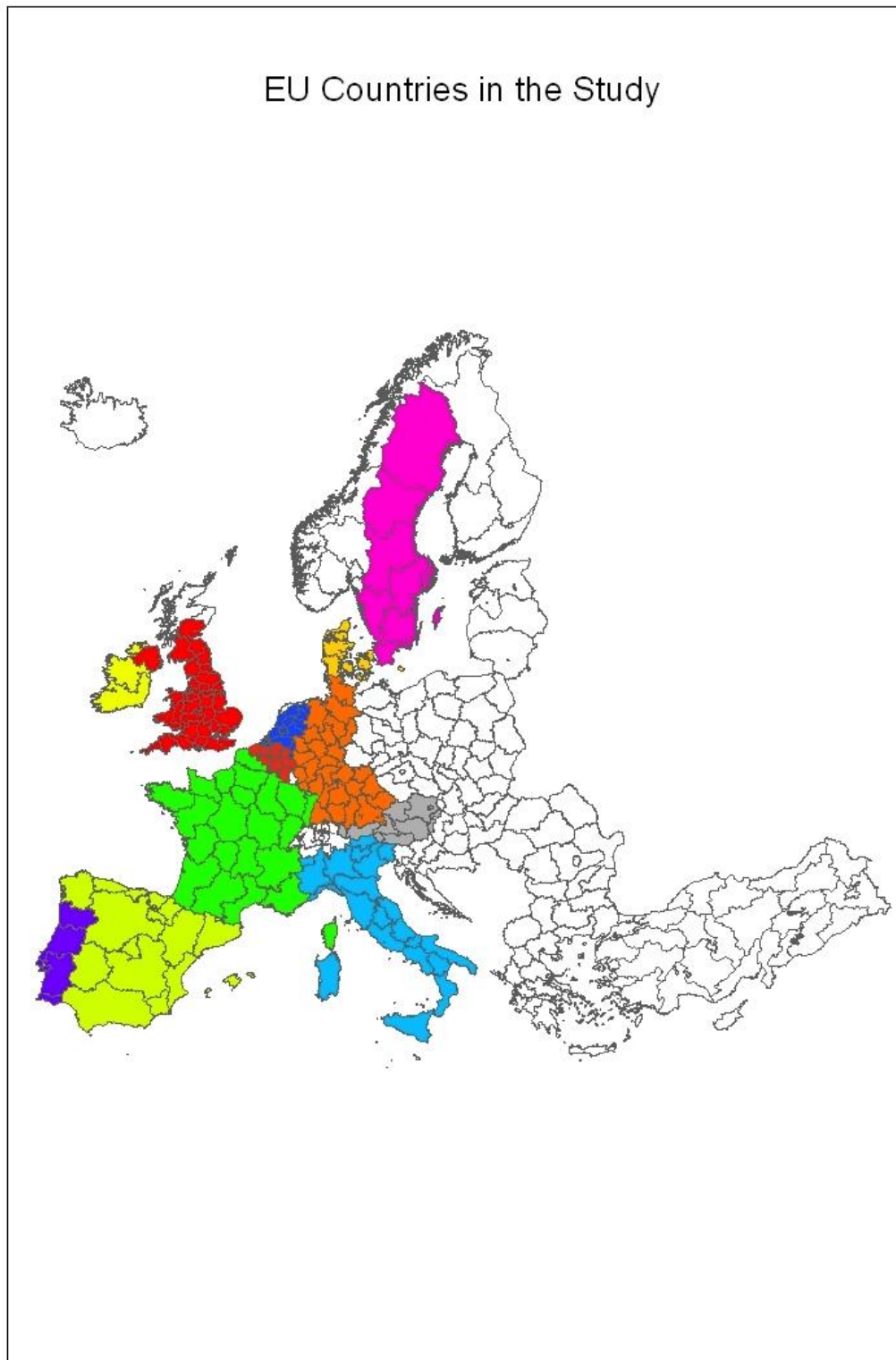
Definition: The area of the regions is the total land area delimited by the official administrative borders that are defined by the respective governments.

Area of the regions

Summary Table

	mean	sd	min	max
area1990	14905.21	19735.65	161.00	165079.40
area1991	14905.21	19735.65	161.00	165079.40
area1992	14905.21	19735.65	161.00	165079.40
area1993	14906.47	19735.90	161.00	165079.40
area1994	14906.47	19735.90	161.00	165079.40
area1995	14925.11	19756.57	161.00	165079.40
area1996	14925.11	19756.57	161.00	165079.40
area1997	14926.98	19757.29	161.00	165079.40
area1998	14928.15	19757.14	161.00	165079.40
area1999	14928.15	19757.14	161.00	165079.40
area2000	14928.94	19756.81	161.00	165079.40
area2001	14928.87	19766.66	161.00	165295.60
area2002	14928.94	19766.64	161.00	165295.60
area2003	14928.94	19766.64	161.00	165295.60
area2004	14929.26	19766.54	161.00	165295.60
area2005	14929.94	19766.79	161.00	165295.60
area2006	14929.94	19766.81	161.00	165296.00
area2007	14929.94	19766.81	161.00	165295.60
area2008	14929.94	19766.81	161.00	165295.60
N	170			

Figure 4: 12 Countries of the EU15 in the Study



13. The presence of a capital city

Official Title: Capital Dummy Variable

Data source: Own calculations

Regional Level: NUTS 2

Measurement unit: 0, 1

Years: all

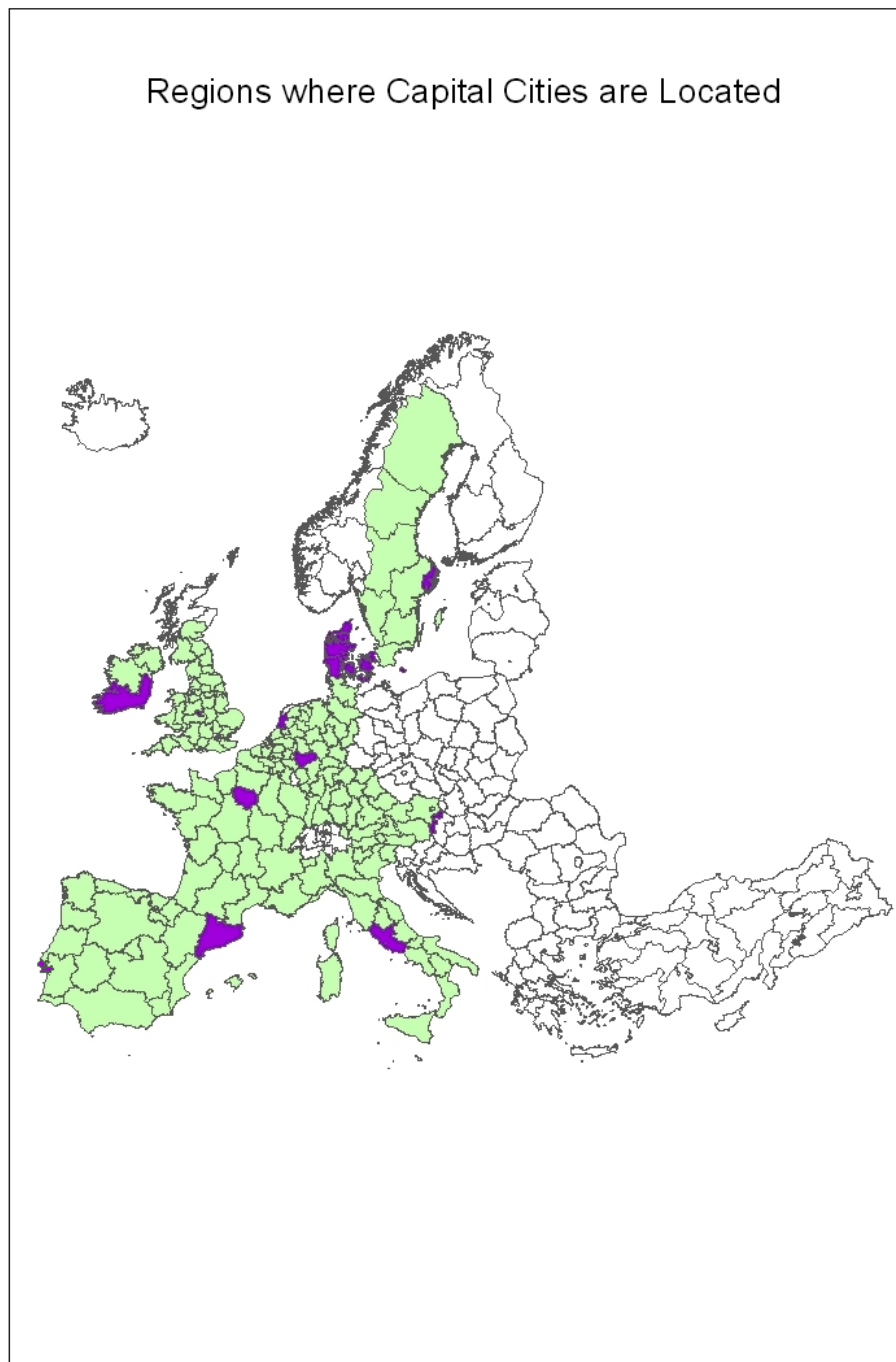
Code: capital

Definition: Dummy variable equal to 1 for the regions which include a capital city of a country, and 0 otherwise. There are two exceptions to using the capital city for defining the instrument. Given the absence of London data in our dataset, the UK dummy was set equal to 1 for the Westmidlands region. In the case of Spain, the dummy was set equal to 1 for Catalonia, given the prominence of Barcelona as a migrant destination in Spain.

Summary Table

	mean	sd	min	max
capital	0.0706	0.2569	0.0000	1.0000
N	170			

Figure 5: Capital Cities



14. Location of McDonald's restaurants

Official Title: McDonald's restaurants

Data source: Own calculations

Regional Level: NUTS 2

Measurement unit: Total number of McDonald's restaurants and per million inhabitants

Years: 2009

Code: mcd/mcdst

Definition: Code mcd stands for the number of McDonald's restaurants per region and the code mcdst is used to denote the number of McDonald's restaurants per million inhabitants of a region.

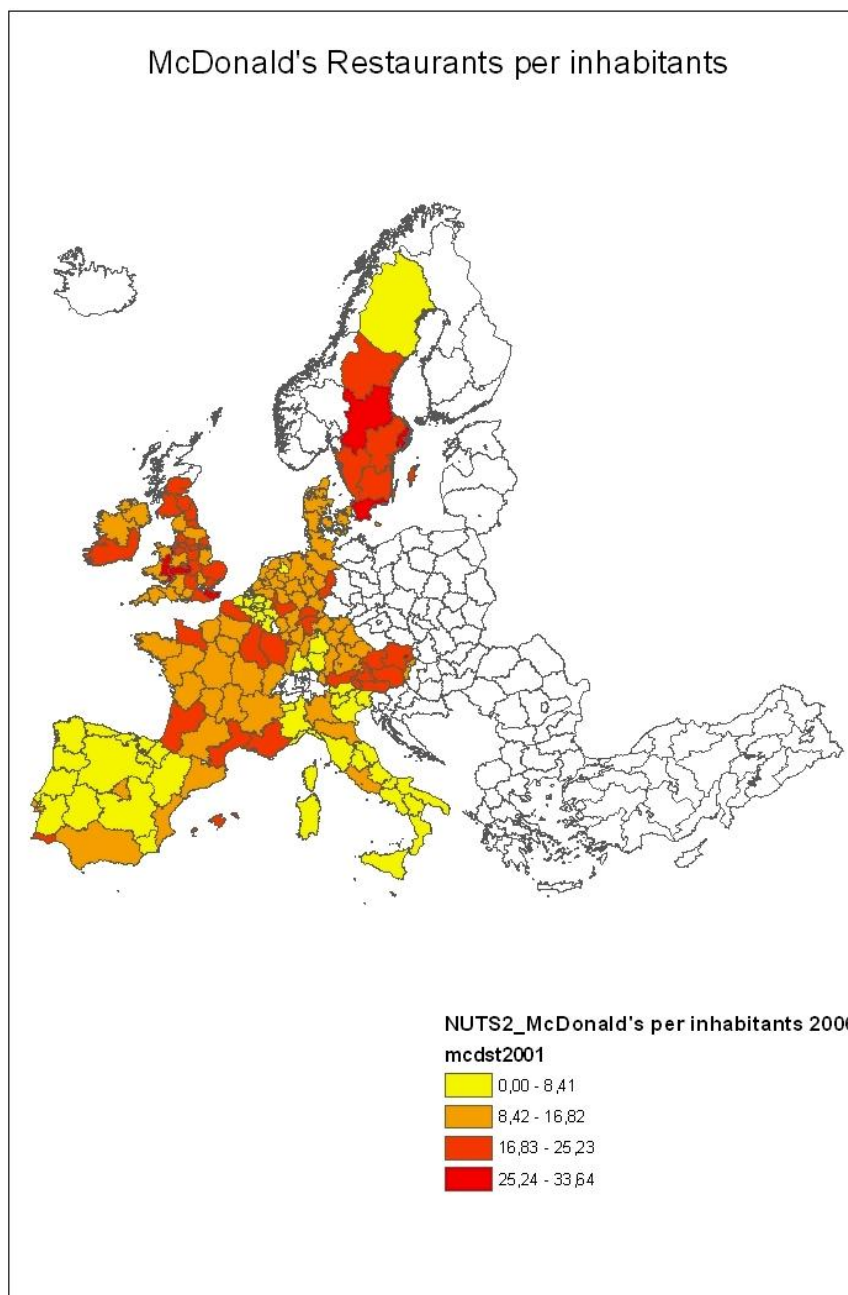
The data are collected from the regional indicators of McDonald's restaurants' country web pages. It is assumed that the websites are regularly updated. The total number of restaurants per country is cross-checked with other available resources on the web.

Number of McDonald's Restaurants (mcd) and Number of McDonald's Restaurants per million inhabitants (mcdst)

Summary Table

	mean	sd	min	max
mcd	26.9588	24.7779	0.0000	189.0000
mcdst	13.4984	7.0965	0.0000	33.6400
N	170			

Figure 6: Number of McDonald's Restaurants per million inhabitants



15. High-Technology patent applications

Official Title: High-tech patent applications to the EPO by priority year at the regional level ⁵

Data source: Eurostat

Eurostat code: pat_ep_rtec

Regional Level: Nuts 2

Measurement unit: High-technology patent applications per million inhabitants

Years: 1990-2007

Code: ht

Definition: High-technology patent applications per million inhabitants

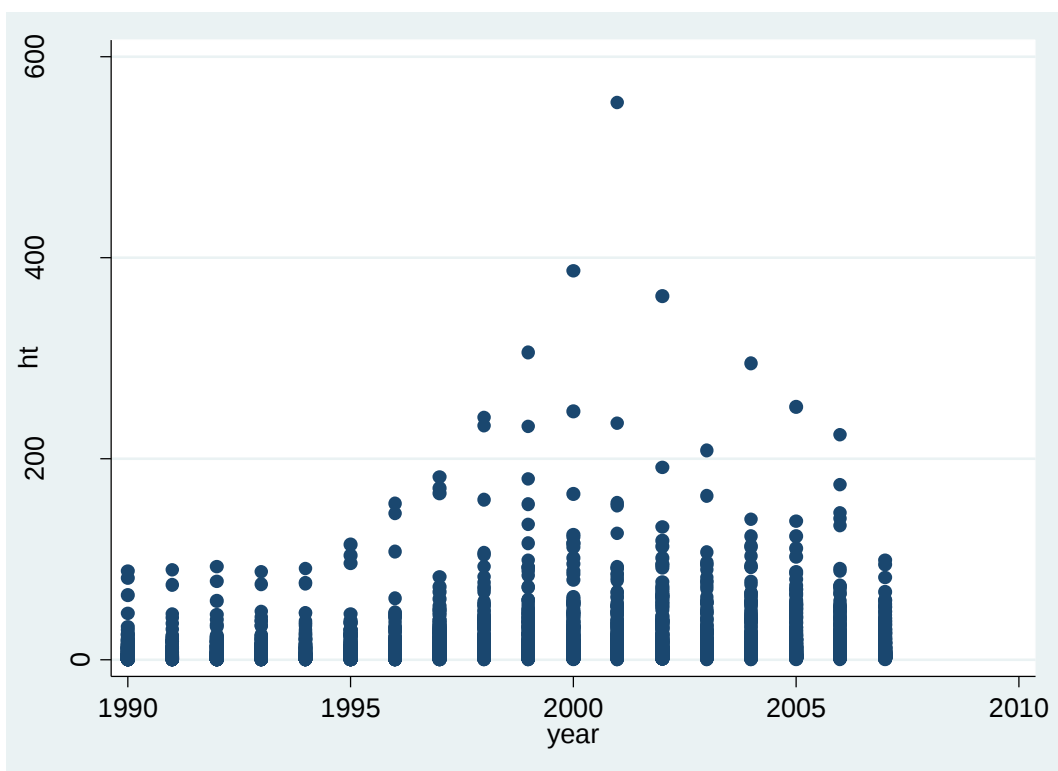
⁵⁵ The data relating to the following 8 patent categories are presented in the worksheet 'Patent Classes' under final.xls file. The missing observations are imputed by applying the same techniques used for the Total Patent applications.

High-tech patent applications

Summary Table

	mean	sd	min	max
ht1990	6.6668	11.9103	0.0012	87.7970
ht1991	6.5737	11.3037	0.0021	89.0110
ht1992	7.0662	12.1799	0.0038	92.2870
ht1993	7.1859	11.7300	0.0067	87.5180
ht1994	8.1755	13.2650	0.0121	90.2090
ht1995	9.1203	15.8670	0.0215	114.7520
ht1996	11.4801	20.5117	0.0350	155.4340
ht1997	15.4229	25.8711	0.0480	181.6160
ht1998	20.2145	33.1973	0.1210	241.0250
ht1999	24.5431	39.4916	0.1096	305.8680
ht2000	26.1494	43.2051	0.0978	386.7140
ht2001	25.9261	51.5255	0.0860	554.4190
ht2002	24.3356	38.9297	0.3085	362.0140
ht2003	20.8390	28.8032	0.2410	208.4790
ht2004	22.9037	33.9979	0.1340	294.7160
ht2005	21.8253	30.6322	0.2690	251.3600
ht2006	22.0668	31.5885	0.2620	223.5770
ht2007	14.4972	17.2651	0.2729	98.9940
N	170			

Cross-tab figure



16. ICT patent applications

Official Title: ICT patent applications to the EPO by priority year at the regional level

Data source: Eurostat

Eurostat code: pat_ep_rict

Regional Level: Nuts 2

Measurement unit: ICT patent applications per million inhabitants

Years: 1990-2007

Code: ict

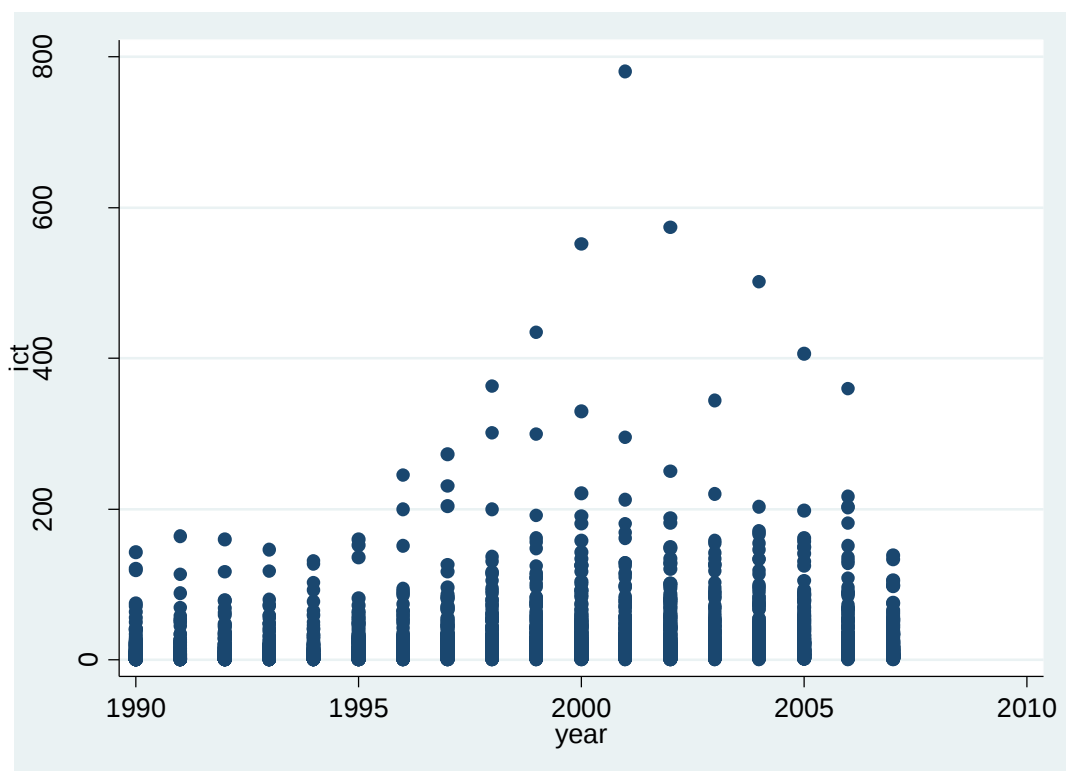
Definition: ICT patent applications per million inhabitants

ICT patent applications

Summary Table

	mean	sd	min	max
ict1990	11.3783	20.2357	0.0346	142.6910
ict1991	10.8473	19.5496	0.0446	163.7040
ict1992	11.5882	20.1314	0.0574	159.2800
ict1993	11.7767	19.5558	0.0739	146.0500
ict1994	12.5468	20.4992	0.0950	130.6280
ict1995	14.1502	23.6324	0.1223	160.1000
ict1996	17.2739	31.2700	0.1230	244.3870
ict1997	22.4989	36.7964	0.1850	273.1100
ict1998	28.4395	45.4544	0.1510	363.1160
ict1999	32.1713	50.9240	0.1630	434.3230
ict2000	36.1737	59.7825	0.1380	551.3190
ict2001	35.8389	71.1945	0.0860	781.1200
ict2002	34.5075	57.3507	0.2555	573.1160
ict2003	30.5081	43.3578	0.2410	343.6590
ict2004	33.4471	52.6113	0.1020	500.9320
ict2005	32.1431	46.0215	0.5990	406.0610
ict2006	31.8197	46.4558	0.1700	359.5030
ict2007	20.5314	25.0631	0.1260	138.3140
N	170			

Cross-tab figure



17. Biotechnology patent applications

Official Title: Biotechnology patent applications to the EPO by priority year at the regional level

Data source: Eurostat

Eurostat code: pat_ep_rbio

Regional Level: Nuts 2

Measurement unit: Biotechnology patent applications per million inhabitants

Years: 1990-2007

Code: bio

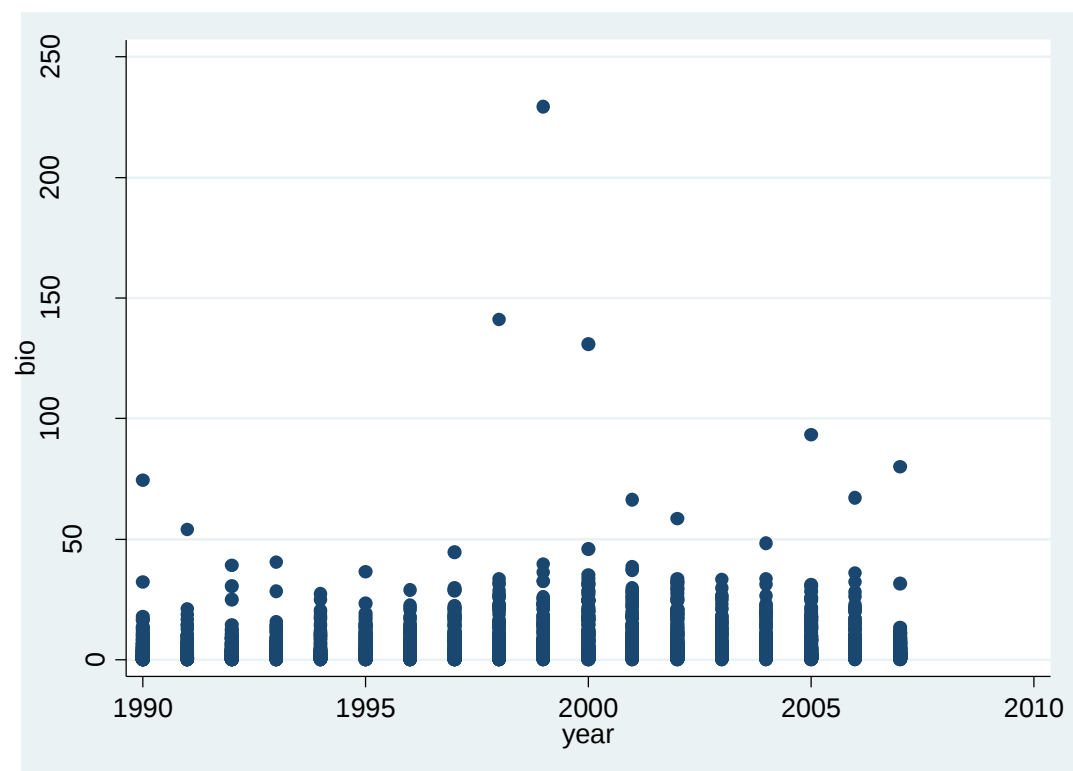
Definition: Biotechnology patent applications per million inhabitants

Biotechnology patent applications

Summary Table

	mean	sd	min	max
bio1990	3.0093	6.8545	0.0000	74.2425
bio1991	2.7974	5.3335	0.0000	53.8095
bio1992	2.7041	4.8018	0.0000	39.0000
bio1993	2.7422	4.7759	0.0000	40.2900
bio1994	2.9867	4.7684	0.0000	27.3000
bio1995	3.1664	4.9926	0.0000	36.3740
bio1996	3.6433	5.0801	0.0000	29.0210
bio1997	5.0931	6.9205	0.0000	44.4720
bio1998	6.7196	12.8052	0.0000	140.8680
bio1999	7.7361	18.8342	0.0000	229.3170
bio2000	7.6787	12.9015	0.0000	130.8150
bio2001	7.1957	9.4805	0.0000	66.3030
bio2002	6.7217	8.8211	0.0000	58.5010
bio2003	5.6310	6.5708	0.0000	33.1180
bio2004	6.0101	7.5179	0.0000	48.3480
bio2005	6.1595	9.4881	0.0000	93.2990
bio2006	6.0319	8.1348	0.0000	67.2340
bio2007	3.8990	6.9220	0.0000	80.0117
N	170			

Cross-tab figure



18. Electricity patent applications

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Electricity patent applications per million inhabitants

Years: 1990-2007

Code: e

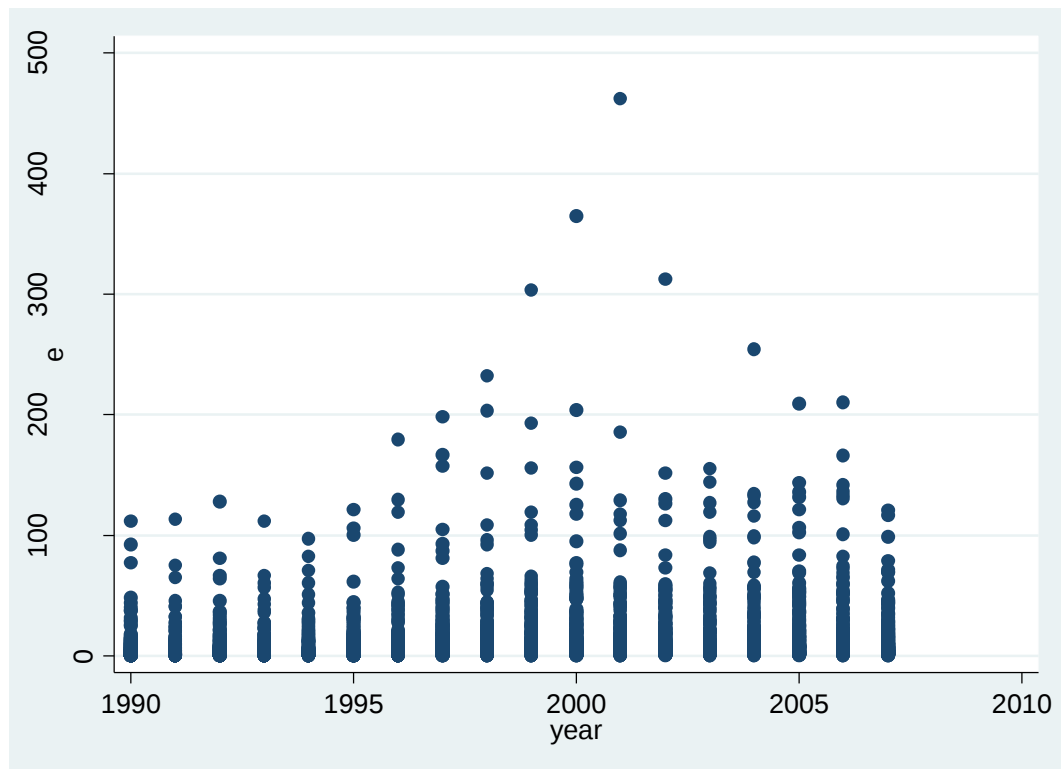
Definition: Electricity patent applications per million inhabitants

Electricity patent applications

Summary Table

	mean	sd	min	max
e1990	7.3783	14.5132	0.0120	111.3690
e1991	7.2117	13.5053	0.0120	112.8310
e1992	7.6213	14.9220	0.0307	128.1790
e1993	7.5763	13.5272	0.0273	111.5780
e1994	8.3984	14.0605	0.0240	97.1160
e1995	9.8531	16.8208	0.0850	120.8500
e1996	11.9356	22.8065	0.0500	179.4430
e1997	15.2438	27.5960	0.1020	198.2910
e1998	17.7300	30.4231	0.0790	232.1170
e1999	20.1669	34.9693	0.1238	303.0060
e2000	21.7683	39.4053	0.0300	365.0040
e2001	20.4992	42.4597	0.0690	461.8640
e2002	19.5006	32.9894	0.2003	312.2720
e2003	17.6875	26.0459	0.0890	154.7910
e2004	19.7763	31.1825	0.0350	254.0600
e2005	20.1411	29.8498	0.1050	209.2350
e2006	21.3052	31.9946	0.0250	210.4310
e2007	14.5368	19.9760	0.0245	120.4570
N	170			

Cross-tab figure



19. Fixed construction patent applications

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Fixed construction patent applications per million inhabitants

Years: 1990-2007

Code: fc

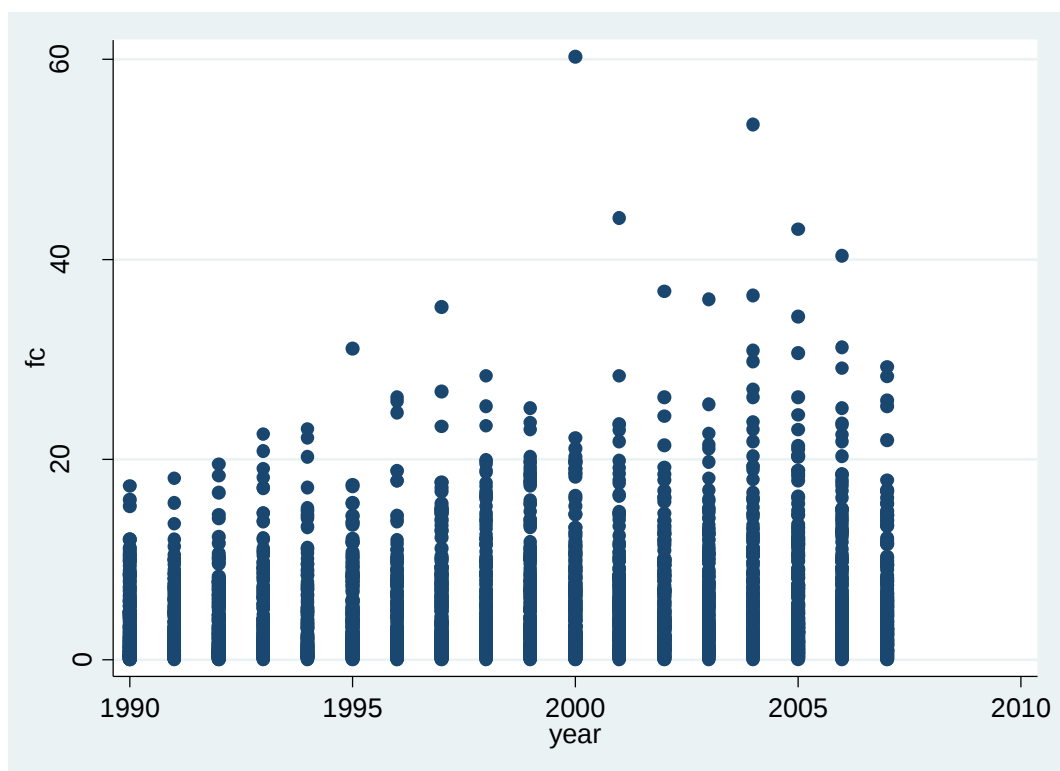
Definition: Fixed construction patent applications per million inhabitants

Electricity patent applications

Summary Table

	mean	sd	min	max
fc1990	3.4054	3.5207	0.0080	17.3220
fc1991	3.2781	3.3303	0.0080	18.1180
fc1992	3.4300	3.7305	0.0080	19.5280
fc1993	4.0349	4.5430	0.0080	22.5350
fc1994	3.9819	4.5820	0.0080	23.0590
fc1995	4.1117	4.5817	0.0080	31.1060
fc1996	4.5788	5.0439	0.0080	26.2180
fc1997	5.3200	5.5545	0.0080	35.2290
fc1998	6.0747	5.7671	0.0080	28.3340
fc1999	6.3429	5.9146	0.0080	25.1500
fc2000	6.4047	6.7663	0.0080	60.2530
fc2001	6.2122	6.1704	0.0080	44.1550
fc2002	5.8935	5.5256	0.0080	36.7870
fc2003	6.3358	5.5740	0.0080	36.0120
fc2004	7.3718	7.4977	0.0080	53.4910
fc2005	6.9685	7.0000	0.0080	43.0210
fc2006	7.1414	6.7081	0.0080	40.3990
fc2007	5.9981	5.6686	0.0080	29.2386
N	170			

Cross-tab figure



20. Physic patent applications

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Physic patent applications per million inhabitants

Years: 1990-2007

Code: ph

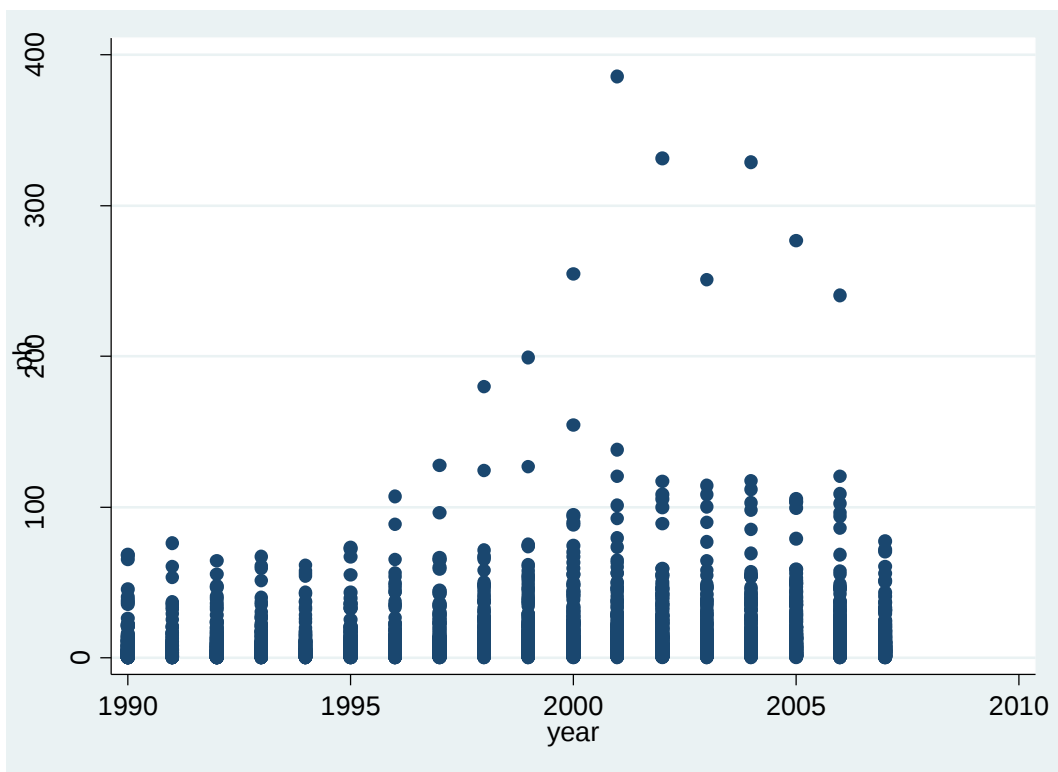
Definition: Physic patent applications per million inhabitants

Electricity patent applications

Summary Table

	mean	sd	min	max
ph1990	7.0559	11.4467	0.0012	68.2220
ph1991	6.6488	10.5804	0.0021	76.0150
ph1992	6.8769	10.6395	0.0038	64.1840
ph1993	7.1239	11.0047	0.0067	67.2880
ph1994	7.5338	11.1002	0.0121	60.9400
ph1995	8.3556	12.4740	0.0215	73.1570
ph1996	9.7579	15.3524	0.0385	107.0060
ph1997	12.1865	17.2548	0.0410	127.4210
ph1998	15.2453	21.3845	0.0310	179.4710
ph1999	16.2311	23.0183	0.0150	199.3830
ph2000	19.0584	28.3052	0.0360	254.5450
ph2001	19.4367	35.6174	0.0860	385.7160
ph2002	18.9590	31.8179	0.0420	331.3000
ph2003	17.2133	26.7572	0.1110	250.4750
ph2004	19.4659	31.7388	0.0250	328.7340
ph2005	19.1082	28.2378	0.1749	276.3790
ph2006	18.5785	26.9741	0.1563	240.3650
ph2007	12.0580	13.8893	0.1397	77.2080
N	170			

Cross-tab figure



21. Mechanical engineering; lighting; heating; weapons; blasting patent applications

,

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Mechanical Engineering patent applications per million inhabitants

Years: 1990-2007

Code: mec

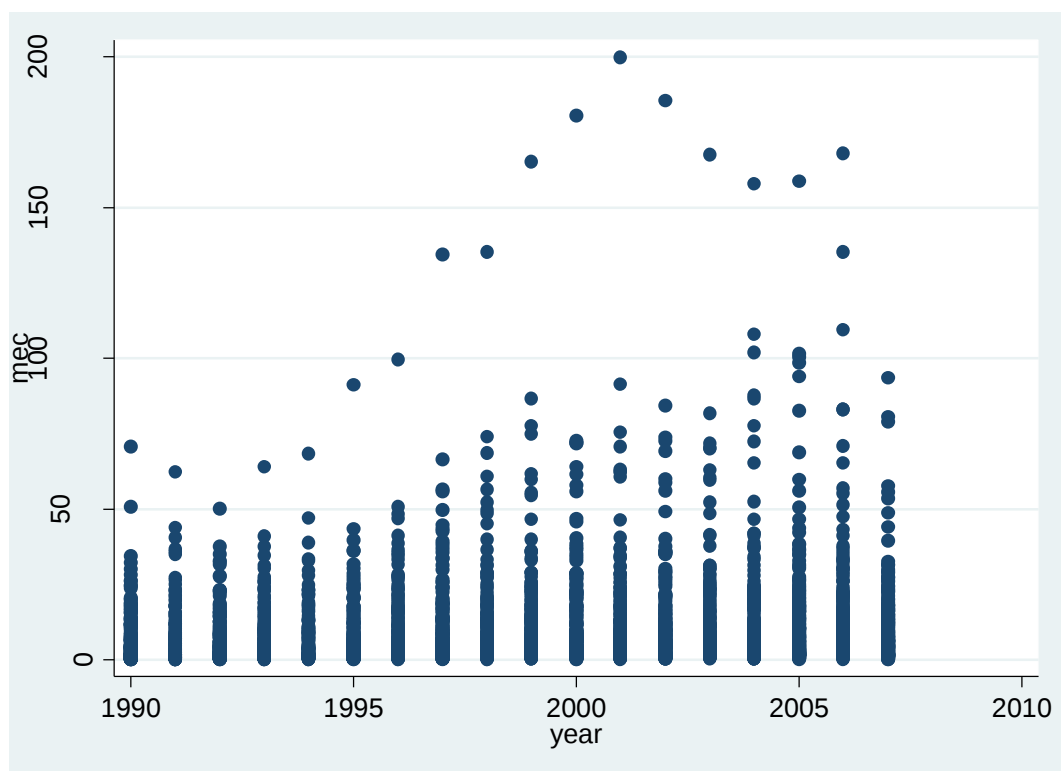
Definition: Medical Engineering patent applications per million inhabitants

Mechanical engineering; lighting; heating; weapons; blasting patent applications

Summary Table

	mean	sd	min	max
mec1990	6.9913	9.4714	0.0175	70.7930
mec1991	6.8881	9.4599	0.0236	62.2840
mec1992	6.5638	8.3914	0.0319	50.1580
mec1993	7.2898	9.4047	0.0432	63.8490
mec1994	7.3222	9.4775	0.0584	68.4290
mec1995	7.4989	10.8995	0.0530	91.1370
mec1996	9.2554	12.6485	0.0380	99.5670
mec1997	10.5855	15.5788	0.0900	134.3340
mec1998	11.9298	16.3436	0.0650	135.2880
mec1999	13.2352	18.9495	0.1430	165.2160
mec2000	13.9298	19.6952	0.0190	180.6320
mec2001	13.6038	20.9564	0.0610	199.8780
mec2002	13.3677	20.1211	0.1080	185.4010
mec2003	14.2212	19.3408	0.1640	167.6810
mec2004	15.3899	21.4936	0.1200	157.7680
mec2005	15.6063	21.8673	0.0770	158.5690
mec2006	16.2802	22.4837	0.0250	168.0550
mec2007	12.0794	14.6354	0.0203	93.5340
N	170			

Cross-tab figure



22. Textiles patent applications

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Textiles patent applications per million inhabitants

Years: 1990-2007

Code: tx

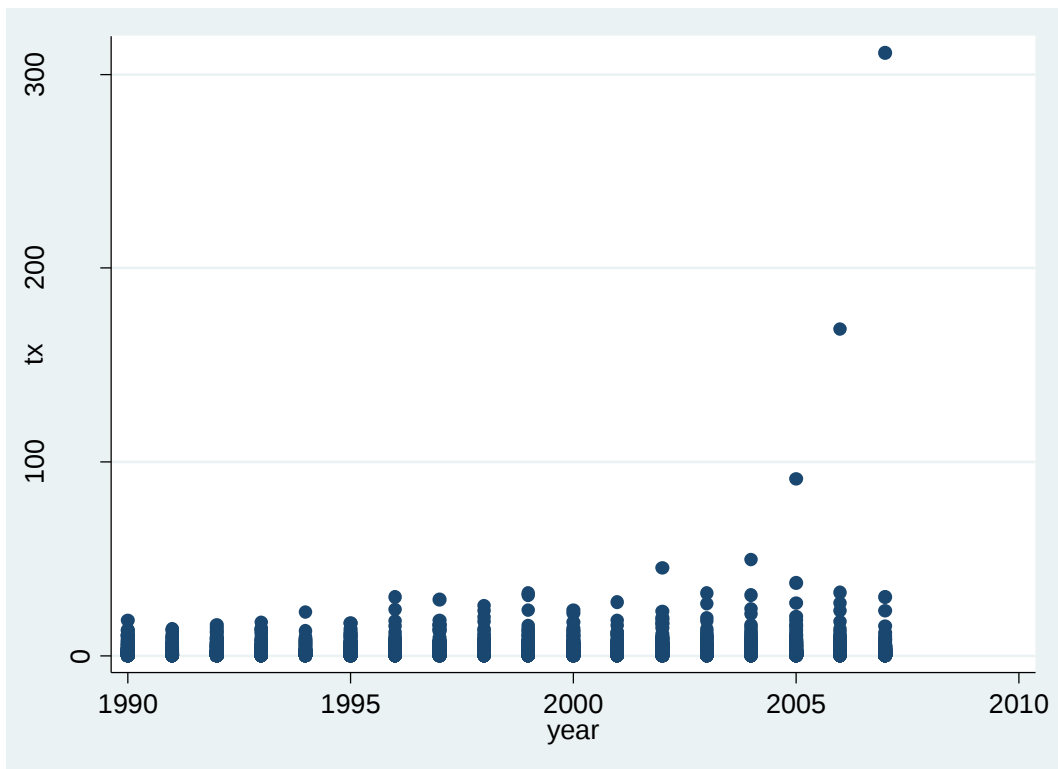
Definition: Textiles patent applications per million inhabitants

Textiles patent applications

Summary Table

	mean	sd	min	max
tx1990	1.9774	2.9885	0.0050	18.1890
tx1991	1.9906	2.8403	0.0050	13.9940
tx1992	1.7660	2.7315	0.0050	15.8440
tx1993	1.9647	2.9816	0.0050	17.1270
tx1994	1.8747	2.8421	0.0050	22.5650
tx1995	1.9763	2.9982	0.0050	16.8940
tx1996	2.2156	3.8724	0.0050	30.3610
tx1997	2.4076	3.9153	0.0050	29.1000
tx1998	2.4721	3.9182	0.0050	25.8840
tx1999	2.7291	4.5937	0.0050	32.3080
tx2000	2.4714	3.6477	0.0050	23.4600
tx2001	2.4577	3.5857	0.0050	27.6170
tx2002	2.8901	4.9943	0.0050	45.0710
tx2003	2.6003	4.4087	0.0050	32.4450
tx2004	2.9885	5.6214	0.0050	49.4080
tx2005	3.2899	8.2878	0.0050	91.2261
tx2006	3.7126	13.4593	0.0050	168.4384
tx2007	3.9100	23.9509	0.0050	311.0018
N	170			

Cross-tab figure



23. Human necessities patent applications

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Human necessities patent applications per million inhabitants

Years: 1990-2007

Code: hn

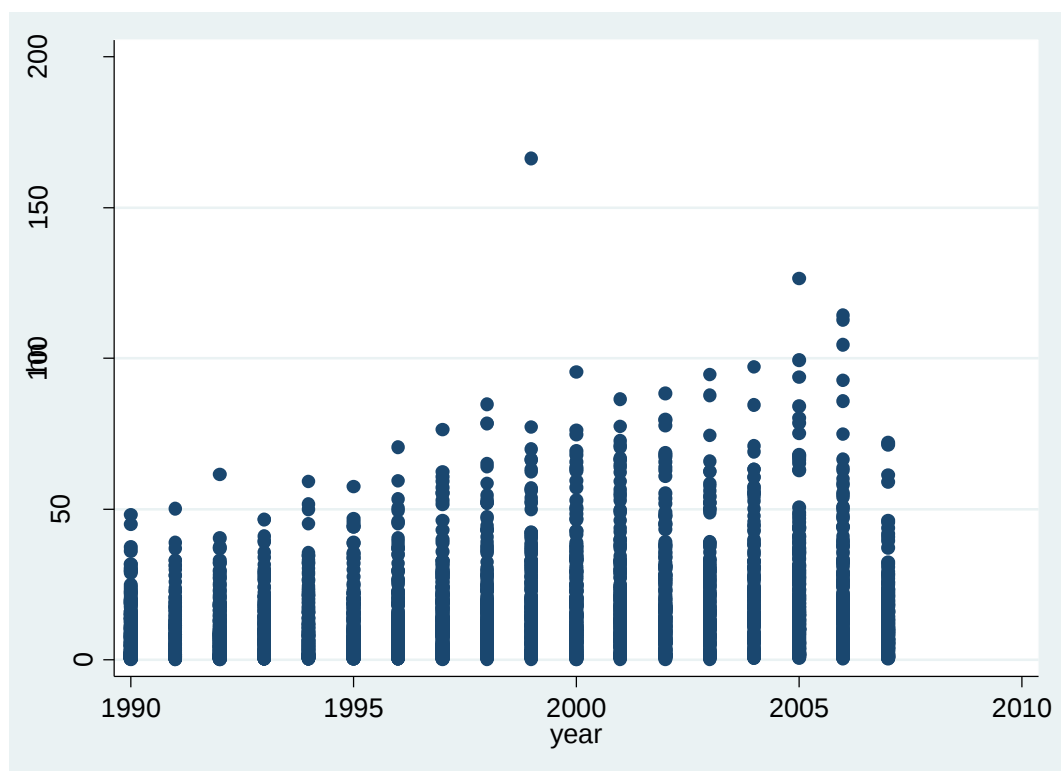
Definition: Human necessities patent applications per million inhabitants

Human necessities patent applications

Summary Table

	mean	sd	min	max
hn1990	8.8472	9.3831	0.0700	48.0660
hn1991	8.6727	8.9394	0.0310	50.0850
hn1992	8.8522	9.5454	0.0470	61.2990
hn1993	9.8138	10.1300	0.1150	46.4240
hn1994	10.4566	11.0180	0.1100	59.0960
hn1995	10.8934	11.1512	0.1100	57.3720
hn1996	12.8994	13.1669	0.1800	70.4970
hn1997	15.6677	14.3877	0.0390	76.2070
hn1998	17.5447	16.5774	0.0498	84.7880
hn1999	20.3876	19.8301	0.0607	166.2240
hn2000	20.0675	17.8437	0.0590	95.2600
hn2001	20.3092	18.8307	0.0823	86.3400
hn2002	20.2866	18.7117	0.0932	88.4390
hn2003	20.0681	17.5093	0.0950	94.4150
hn2004	21.1998	18.0939	0.3350	97.1290
hn2005	22.8114	21.4734	0.3143	126.3140
hn2006	22.9441	21.2108	0.2949	114.1910
hn2007	13.7644	12.7353	0.2767	72.0320
N	170			

Cross-tab figure



24. Performing operations; transporting patent applications

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Performing operations; transporting patent applications per million inhabitant

Years: 1990-2007

Code: pot

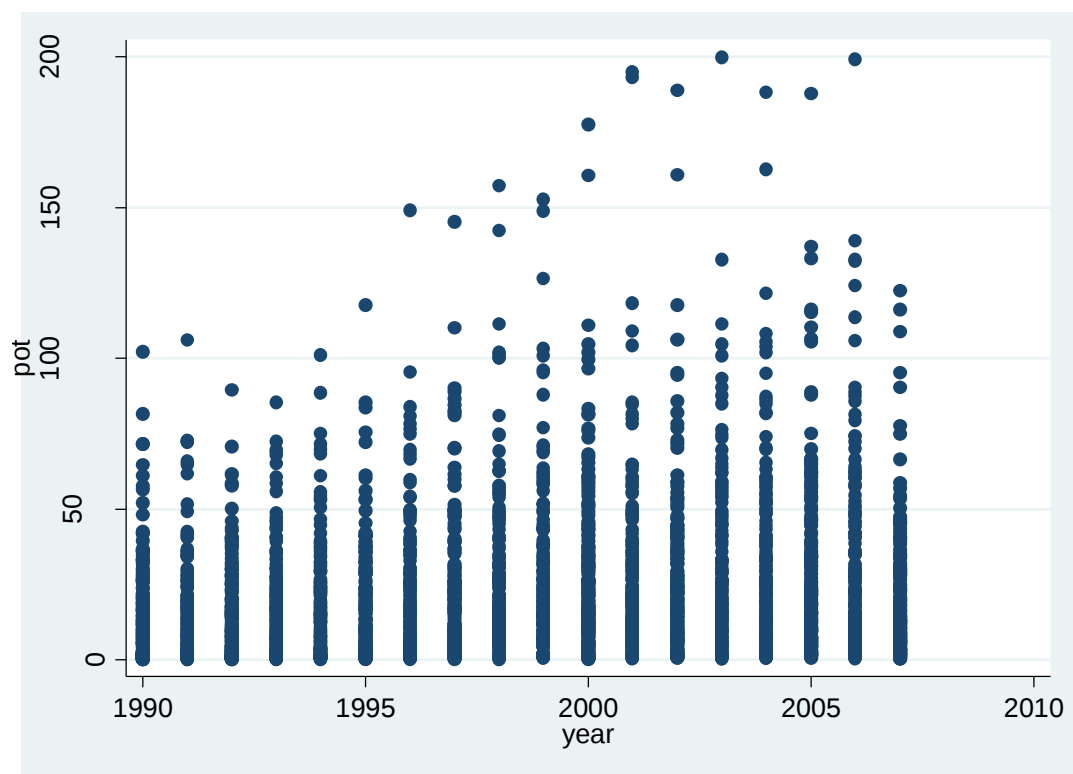
Definition: Performing operations; transporting patent applications per million inhabitants

Performing operations; transporting patent applications

Summary Table

	mean	sd	min	max
pot1990	15.0985	17.6511	0.0037	102.2550
pot1991	14.7819	17.4290	0.0058	105.8970
pot1992	14.9102	16.3729	0.0092	89.3780
pot1993	15.6244	17.6662	0.0145	85.4250
pot1994	16.2919	18.6203	0.0228	101.2020
pot1995	16.9278	19.4112	0.0360	117.6320
pot1996	19.1060	22.6809	0.0985	149.0710
pot1997	22.1973	24.2112	0.0080	145.2410
pot1998	25.4150	26.5580	0.0080	157.1260
pot1999	27.0782	27.1543	0.3775	152.6790
pot2000	27.5472	28.5589	0.0630	177.5120
pot2001	25.9891	29.1671	0.2360	194.8970
pot2002	27.1911	28.5040	0.3160	188.7410
pot2003	27.5897	28.3387	0.1890	199.8440
pot2004	29.9784	30.0846	0.3180	188.2540
pot2005	29.7035	30.3635	0.4420	187.7660
pot2006	30.0020	31.6307	0.2590	199.1250
pot2007	20.0674	21.9207	0.1990	122.4330
N	170			

Cross-tab figure



25. Chemicals patent applications

Official Title: Patent applications to the EPO by priority year at the regional level by IPC sections and classes

Data source: Eurostat

Eurostat code: pat_ep_ripc

Regional Level: Nuts 2

Measurement unit: Chemicals patent applications per million inhabitants

Years: 1990-2007

Code: c

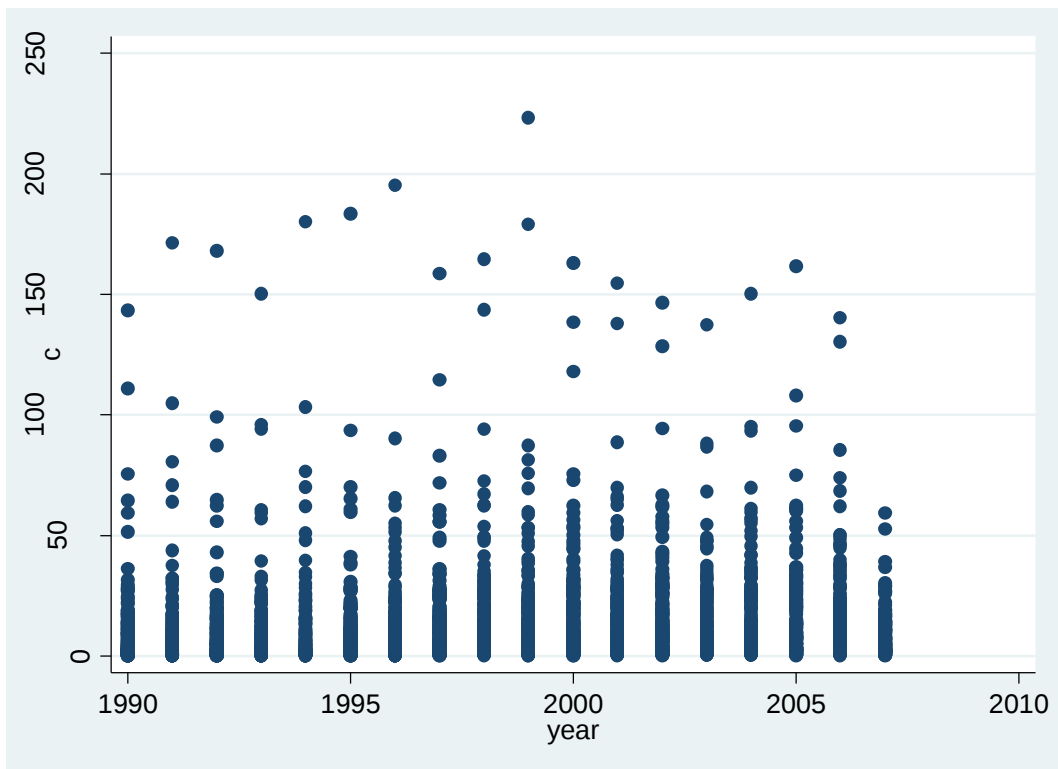
Definition: Chemicals patent applications per million inhabitants

Chemicals patent applications

Summary Table

	mean	sd	min	max
c1990	9.4488	17.3622	0.0073	143.3160
c1991	9.7400	18.7693	0.0106	171.2030
c1992	9.8928	18.6387	0.0140	168.1810
c1993	9.8417	17.6616	0.0100	150.3470
c1994	10.2057	19.3452	0.0270	180.0660
c1995	10.4251	19.0747	0.0400	183.5050
c1996	11.9842	19.9383	0.0566	195.0960
c1997	14.0879	19.6788	0.0611	158.5630
c1998	16.0335	21.4892	0.0660	164.5220
c1999	17.0761	25.8451	0.0520	223.2150
c2000	17.5302	22.4503	0.0380	163.1210
c2001	16.1325	21.1402	0.0430	154.4400
c2002	16.2684	20.4288	0.0600	146.6460
c2003	15.1909	17.9377	0.2240	137.2680
c2004	16.5733	19.6535	0.2120	150.1880
c2005	16.6926	20.7440	0.1220	161.5750
c2006	16.3684	19.9238	0.0610	140.2800
c2007	8.3326	9.0253	0.0513	59.2510
N	170			

Cross-tab figure



Indicators	Code	Measures	NUTS	Years	Data source	Last update	Measurement unit	Eurostat code	Title
1 Patent applications	p	Total patent applications per million inhabitants (pmi)	nuts2	1990-2007	Eurostat, EPO	09.08.2010	Per million of inhabitants	pat_ep_rtot	Patent applications to the EPO by priority year at the regional level
2 Population & labour force	jan	Population at 1st Jan	nuts3/nuts2	1990-2008	Eurostat	09.09.2010	Level	dem_r_d2jan	Population at 1st January by sex and age from 1990 onwards
	pd	Average population divided by total area of the region	nuts3/nuts2	1990-2008	Eurostat	09.09.2010	Population/km ²	dem_r_d3dens	Population density
	young	The share of young working age pop. over total working age pop.	nuts2	1990-2008	Eurostat	09.09.2010	Percentage	dem_r_d2jan	Young population
	hr	Human resources in science & tech. as a % of active pop.	nuts2	1994-2009	Eurostat	09.09.2010	As percentage share of active population	hrst_st_rcat	Annual data on HRST and sub-groups (NUTS level 0, 1 and 2)
3 Immigration	shfor	Share of foreigners in total population	nuts3/nuts2	1991, 2001	Eurostat, IAB, Census	26.03.2009	Percentage	cens_rsctz	Population by sex, country of citizenship and indicator of birth
	index	Diversity index incl natives	nuts2	2001	Own calculations	2010	-	NA	Fractionalization index = 1-Herfindal index of nationality shares
	indexb	Diversity index excl natives	nuts2	2001	Own calculations	2010	-	NA	Fractionalization index = 1-Herfindal index of nationality shares
4 Production structure & performance	smv	Ratio of services value added to manufacturing value added	nuts3/nuts2	1990-2008	Oxford econometrics	-	-	NA	Specialization in production
	gdp	GDP per capita in 1995 PPP euros	nuts2	1990-2008	Oxford econometrics	-	(Adjusted to GDP-level 1995m euro)	NA	Per capita income
5 Geography & instruments	w	Weight matrix based on Euclidean distance	nuts2	2009	ETIS	-	km	NA	Weight matrix
	access	Accessibility index for transport and market potential	nuts2	2009	ESPON	-	-	NA	Accessibility index
	area	Area of the regions	nuts3/nuts2	1990-2008	Eurostat	21.01.2010	km ²	dem_r_d3area	Area of the regions
	capital	Presence of a capital city	nuts2	1990-2008	Own	-	1,0	NA	Presence of a capital city
	mcd /mcdst	Number of McDonald's restaurants / Number of McDonald's restaurants per million inhabitants	nuts2	2009	Own calculations	2010	Level / Per million of inhabitants	NA	McDonald's restaurants

C. List of Regions in the Study

No	nuts2_1991	nuts2_2001	regio_N2
1	AT11	AT11	Burgenland
2	AT12	AT12	Niederösterreich
3	AT13	AT13	Wien
4	AT21	AT21	Kärnten
5	AT22	AT22	Steiermark
6	AT31	AT31	Oberösterreich
7	AT32	AT32	Salzburg
8	AT33	AT33	Tirol
9	AT34	AT34	Vorarlberg
10	BE1	BE1	Bruxelles
11	BE21	BE21	Anvers
12	BE22	BE22	Limbourg
13	BE23	BE23	Flandre Orientale
14	BE24	BE24	Brabant Flamand
15	BE25	BE25	Flandre Occidentale
16	BE25	BE31	Brabant Wallon
17	BE25	BE32	Hainaut
18	BE25	BE33	Liège
19	BE25	BE34	Luxembourg
20	BE25	BE35	Namur
21	DE11	DE11	Stuttgart
22	DE12	DE12	Karlsruhe
23	DE13	DE13	Freiburg
24	DE14	DE14	Tübingen
25	DE21	DE21	Oberbayern
26	DE22	DE22	Niederbayern
27	DE23	DE23	Oberpfalz
28	DE24	DE24	Oberfranken
29	DE25	DE25	Mittelfranken
30	DE26	DE26	Unterfranken
31	DE27	DE27	Schwaben
32	DE50	DE5	Bremen
33	DE60	DE6	Hamburg
34	DE71	DE71	Darmstadt
35	DE72	DE72	Gießen
36	DE73	DE73	Kassel
37	DE91	DE91	Braunschweig
38	DE92	DE92	Hannover
39	DE93	DE93	Lüneburg
40	DE94	DE94	Weser-Ems
41	DEA1	DEA1	Düsseldorf
42	DEA2	DEA2	Köln

No	nuts2_1991	nuts2_2001	regio_N2
43	DEA3	DEA3	Münster
44	DEA4	DEA4	Detmold
45	DEA5	DEA5	Arnsberg
46	DEB1	DEB1	Koblenz
47	DEB2	DEB2	Trier
48	DEB3	DEB3	Rheinhessen-Pfalz
49	DEC1	DEC	Saarland
50	DEF0	DEF	Schleswig-Holstein
51	DK00	DK00	Denmark
52	ES11	ES11	Galicia
53	ES12	ES12	Asturias
54	ES13	ES13	Cantabria
55	ES21	ES21	Pais Vasco
56	ES22	ES22	Navarra
57	ES23	ES23	La Rioja
58	ES24	ES24	Aragon
59	ES3	ES3	Madrid
60	ES41	ES41	Castilla y Leon
61	ES42	ES42	Castilla -la Mancha
62	ES43	ES43	Extremadura
63	ES51	ES51	Catalunia
64	ES52	ES52	Comunidad Valenciana
65	ES53	ES53	Islas Baleares
66	ES61	ES61	Andalucia
67	ES62	ES62	Murcia
68	FR10	FR1	Ile de France
69	FR21	FR21	Champagne-Ardenne
70	FR22	FR22	Picardie
71	FR23	FR23	Haute-Normandie
72	FR24	FR24	Centre
73	FR25	FR25	Basse-Normandie
74	FR26	FR26	Bourgogne
75	FR30	FR3	Nord-Pas de Calais
76	FR41	FR41	Lorraine
77	FR42	FR42	Alsace
78	FR43	FR43	Franche-Comté
79	FR51	FR51	Pays de la Loire
80	FR52	FR52	Bretagne
81	FR53	FR53	Poitou-Charentes
82	FR61	FR61	Aquitaine
83	FR62	FR62	Midi-Pyrénées
84	FR63	FR63	Limousin

No	nuts2_1991	nuts2_2001	regio_N2
85	FR71	FR71	Rhone-Alpes
86	FR72	FR72	Auvergne
87	FR81	FR81	Languedoc-Roussillon
88	FR82	FR82	Provence-Alpes-Cote d'Azur
89	FR83	FR83	Corse
90	IE01	IE01	Border, Midland and Western Regional Assembly (Ireland)
91	IE02	IE02	Southern-Eastern
92	IT11	ITC1	Piemonte
93	IT12	ITC2	Val d'Aosta
94	IT13	ITC3	Liguria
95	IT20	ITC4	Lombardia
96	IT31	ITD1	Bolzano
97	IT31	ITD2	Trento
98	IT32	ITD3	Veneto
99	IT33	ITD4	Friuli
100	IT40	ITD5	Emilia Romagna
101	IT51	ITE1	Toscana
102	IT52	ITE2	Umbria
103	IT53	ITE3	Marche
104	IT60	ITE4	Lazio
105	IT71	ITF1	Abruzzo
106	IT72	ITF2	Molise
107	IT80	ITF3	Campania
108	IT91	ITF4	Puglia
109	IT92	ITF5	Basilicata
110	IT93	ITF6	Calabria
111	ITA0	ITG1	Sicilia
112	ITB0	ITG2	Sardegna
113	NL11	NL11	Groningen
114	NL12	NL12	Friesland
115	NL13	NL13	Drenthe
116	NL21	NL21	Overijssel
117	NL22	NL22	Gelderland
118	NL23	NL23	Flevoland
119	NL31	NL31	Utrecht
120	NL32	NL32	Noord-Holland
121	NL33	NL33	Zuid-Holland
122	NL34	NL34	Zeeland
123	NL41	NL41	Noord-Barbant
124	NL42	NL42	Limburg
125	PT11	PT11	Norte
126	PT15	PT15	Algarve
127	PT12	PT16	Centro
128	PT13	PT17	Lisboa

No	nuts2_1991	nuts2_2001	regio_N2
129	PT14	PT18	Alentejo
130	SE01	SE11	Stockholm
131	SE02	SE12	Östra Mellansverige
136	SE09	SE21	Småland med öarna
132	SE04	SE22	Sydsverige
137	SE0A	SE23	Västsverige
133	SE06	SE31	Norra Mellansverige
134	SE07	SE32	Mellersta Norrland
135	SE08	SE33	Övre Norrland
138	UKC1	UKC1	Tees Valley and Durham
139	UKC2	UKC2	Northumberland and Tyne and Wear
140	UKD1	UKD1	Cumbria
141	UKD2	UKD2	Cheshire
142	UKD3	UKD3	Greater Manchester
143	UKD4	UKD4	Lancashire
144	UKD5	UKD5	Merseyside
145	UKE1	UKE1	East Yorkshire
146	UKE2	UKE2	North Yorkshire
147	UKE3	UKE3	South Yorkshire
148	UKE4	UKE4	West Yorkshire
149	UKF1	UKF1	Derbyshire and Nottinghamshire
150	UKF2	UKF2	Leicestershire
151	UKE1	UKF3	Lincolnshire
152	UKG1	UKG1	Herefordshire, Worcestershire and Warwickshire
153	UKG2	UKG2	Shropshire and Staffordshire
154	UKG3	UKG3	West Midlands
155	UKH1	UKH1	East Anglia
156	UKH2	UKH2	Bedfordshire and Hertfordshire
157	UKH3	UKH3	Essex
158	UKJ1	UKJ1	Berkshire, Buckinghamshire and Oxfordshire
159	UKJ2	UKJ2	Surrey, East and West Sussex
160	UKJ3	UKJ3	Hampshire and Isle of Wight
161	UKJ4	UKJ4	Kent
162	UKK1	UKK1	Gloucestershire, Wiltshire and Bristol/Bath
163	UKK2	UKK2	Dorset and Somerset
164	UKK3	UKK3	Cornwall and Isles of Scilly
165	UKK4	UKK4	Devon
166	UKL1	UKL1	West Wales and The Valleys
167	UKL2	UKL2	East Wales
168	UKM2	UKM2	Eastern Scotland
169	UKM3	UKM3	SW Scotland
170	UKN	UKN	Northern Ireland