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CENTROPE Regional Development Report

Technical Report on Data Availability

Peter Huber, Philipp Hergovich

May 2011



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Abstract

This report describes the data used in the CENTROPE Regional Development Report project and discusses data availability issues.

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CENTROPE Regional Development Report

Technical Report on Data Availability

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1. Introduction

In the course of the CENTROPE project we use a number of both macro-economic as well as micro-economic data sets to derive results. The aim of this report is to give an overview of the major data sources, their definition as well as the potential caveats of the data used in this project. This should allow readers of the CENTROPE regional development reports to assess the quality of the data used and to identify areas where additional data should be collected. In addition the report, when completed, will allow readers a more detailed assessment of the rather strained data situation confronting cross-border regional studies in the EU.

The current report is a first interim report that will be revised and added to on an annual basis to cover more data sets and provide additional information on the quality of data used in the CENTROPE regional development report project. In particular in this interim report we provide a list of indicators available from EUROSTAT's regional database and on the various micro data sets used in the project so far. With respect to the first data set (i.e. the EUROSTAT) data base our interest is to show the range of indicators available on a NUTS 3 and NUTS 2 level for European NUTS 2 regions while with respect to the micro data sets we focus on sampling procedures and characteristics of the sample taken.

The next chapter of the report we describe the full list of indicators available on the EU's NUTS 2 and NUTS 3 regions from EUROSTAT sources. Section three then considers missing data problems, by providing some first information on the extent of missing data problems for a selection of indicators on a NUTS 2 level regional breakdown already used in the CENTROPE regional development report project the past. Finally in section four we also shortly describe additional data sources that have been used in the project so far.

2. Regional data from the EUROSTAT database

2.1 Data at NUTS 3 level

On a NUTS 3 level EUROSTAT's regional database¹ offers large set of indicators on the structure of agricultural holdings by NUTS (see Annex1 to this report) which are, however, not used in the CENTROPE regional development report project and a rather limited set of indicators with respect to population, area, GDP and labour market indicators. In particular these indicators include:

Basic Demographic and geographic indicators

- Annual average population – measured in thousand persons and available from the years 1990 to 2009 and broken down by gender.
- Population on 1 January – available from the year 2000 to the year 2010 by gender and 3 large age groups (less than 15 years, 15 to 64 years, older than 65 years).
- Indicators of demographic balance and crude rates of population change – which include live births and deaths as well as crude birth rates as well as crude death rates. These are available from 1990 to 2008 and further include information on the natural population increase, net migration including corrections and the total population increase, which are, however, available only for the period from 2000 to 2010.
- A large number of population indicators taken from the 2001 census (listed in table 1), which include detailed (5-year interval) age structure, population by household types as well as many other indicators which, however, apply only to the year 2001 and thus seem to be too old to be used in the CENTROPE regional development report project.
- Area of the region – which is measured in kilometres squared.

Indicators of GDP and Gross Value Added and Branch accounts

- GDP at current prices – These data are available for the time period 1995 to 2008 both in terms of purchasing power standards as well as in EURO per inhabitant They are EUROSTAT estimates based on a harmonized methodology for the national statistical offices with the data for gross value added at basic prices (after correction for financial intermediation services indirectly measured - FISIM) being used as the basic variable for estimation of GDP and Extra-regional data (i.e. value added created

¹ Available on http://epp.eurostat.ec.europa.eu/portal/page/portal/region_cities/regional_statistics/data/database.

in other national regions than on national territory, e.g. in embassies, foreign army bases, offshore energy production, etc.) being proportionally allocated to the regions of a country. In addition in these data conversion to PPS is based on national purchasing power parities also regularly calculated by EUROSTAT.

- Gross value added at basic prices at NUTS 3 level – which are available (in millions of €) on sectoral breakdown of agriculture and fishing, industry, construction, wholesale and retail trade; hotels and restaurants; transport, financial intermediation; real estate and public administration and community services including activities of households for the time period.
- Employment in Persons – according to the method of national accounts. These data differ from the employment series in the labour force survey which are, however, available at a NUTS 2 level only. These data distinguish between employees (as a head count) and employed as well as between the same sectors as the gross value added data and are available for the period 1995 to 2008.

Indicators for particular sectors

- Indicators for tourism capacity, which include the number of bedrooms, the number of bed-places and the number of establishments by type of establishment (collective tourist accommodation establishments, hotels and similar establishments, tourist campsites, holiday dwellings, other collective accommodation n.e.s. and other collective accommodation establishments) for the years 1990 to 2011.
- Data on annual road freight transport by region of loading and region of unloading which is measured either in thousands of tons, millions of tonne-kilometres or in thousands of journey for the years 1990 to 2009.

Indicators on labour market development

- Economically active population broken down by gender and crude age groups (15-24 years, older than 25). These data are taken from the European Labour Force Survey and thus is subject to many of the caveats of this data source reported below. It is available for the years 1999 to 2009.
- Unemployment which again broken down by sex and age (according to the same age groups as the economically active) and is again taken from the European Labour force Survey for the years 1999 to 2009.

Table 1: Overview of indicators available from EUROSTAT on a NUTS 3 level

	First Year	Last Year	Update	Obs.
Agriculture				
Structure of agricultural holdings by NUTS, main indicators (ef_r_nuts)	2000	2007	10.09.2009	615,432
Population				
Annual average population by sex (1000) (demo_r_d3avg)	1990	2009	04.02.2011	92,850
Area of the region (demo_r_d3area)	1990	2010	18.02.2011	49,505
Population density (demo_r_d3dens)	1990	2010	18.02.2011	29,021
Population by sex and age groups on 1 January - NUTS level 3 regions (demo_r_pjanaggr3)	2000	2010	14.02.2011	125,577
Demographic balance and crude rates - NUTS level 2 and 3 regions (demo_r_gind3)	2000	2010	18.02.2011	108,066
Births and deaths (1000) (demo_r_d3natmo)	1990	2008	17.12.2010	120,562
Census 2001				
Population by sex, age group, marital and cohabitational status (cens_rsmarcoh)	2001	2001	26.03.2011	814,015
Population by sex, age group and selected social indicator (cens_rsscind)	2001	2001	26.03.2009	575,552
Population by sex, country of citizenship and indicator of birth (cens_rsctz)	2001	2001	26.03.2009	233,426
Population by sex, group of age, economical status (cens_rapop)	2001	2001	26.03.2009	558,223
Total population and active population by sex, age and indicator of internal or international migration (cens_ramigr)	2001	2001	26.03.2009	1,485,361
Employed persons aged 15 and over by sex, major branch of economic activity, indicator of citizenship and status of employment (cens_ractz)	2001	2001	26.03.2009	82,769
Population by sex, age group, highest educational attainment and occupation (cens_reisco)	2001	2001	26.03.2009	493,041
Population by sex, age group, highest educational attainment, current economical activity (cens_rews)	2001	2001	26.03.2009	210,708
GDP/National Accounts				
Gross domestic product (GDP) at current market prices at NUTS level 3 (nama_r_e3gdp)	1995	2008	15.04.2011	148,334
Gross value added at basic prices at NUTS level 3	1995	2008	04.04.2011	418,352
Employment (in persons) at NUTS level 3 (nama_r_e3empl95)	1995	2008	13.04.2011	381,786
Sector Data				
Number of establishments, bedrooms and bedplaces - regional - annual data (tour_cap_nuts3)	1990	2011	19.05.2011	300,683
Annual road freight transport by region of loading (1000 T, Mio Tkm, 1000 Jmys) (road_go_ta_rl)	1999	2009	10.02.2011	269,214
Annual road freight transport by region of unloading (1000 T, Mio Tkm, 1000 Jmys) (road_go_ta_ru)	1999	2009	10.02.2011	271,464
Labour Market				
Economically active population by sex and age, at NUTS levels 1, 2 and 3 (1000) (lfst_r_lfp3pop)	1999	2009	04.04.2011	147,554
Unemployment by sex and age, at NUTS levels 1, 2 and 3 (1000) (lfst_r_lfu3pers)	1999	2009	04.04.2011	156,489
Unemployment rates by sex and age, at NUTS levels 1, 2 and 3 (%) (lfst_r_lfu3rt)	1999	2009	04.04.2011	145,602

Source: EUROSTAT, own derivations.

Table 1 summarizes the indicators available from EUROSTAT sources and also displays the time period for which this data is available and the last date of update in the data base. As can be seen, aside from there being a rather limited set of indicators only, the data are also mostly not very recent. For instance the GDP per capita indicators are currently available only for 2008 and the developments during the crisis on GDP growth will be impossible to

analyse until the 2nd half of 2012 with these data. Unemployment data by contrast is available with a lag of 2 years, so that here we already have data for 2009 - and for 2010 is likely to become available in April 2012.

2.2 Data at NUTS 2 level

In sum therefore information available on a NUTS 3 level from EUROSTAT sources is rather limited. On a NUTS 2 level a larger number of indicators are available, although also here the data are often not very up-to-date. In particular over and above the indicators already described above (which are also available for the same time periods shown in table 1 on a NUTS 2 level) these indicators are taken from a variety of sources and include information on additional demographic data such as mortality statistics by sex and age, birth statistics by age of the mother, life expectancy, life tables and others, as well as on the health system (e.g. death causes, hospital beds, diagnosis of illness in hospitals and others) which we do not dwell upon here, since they will hardly be used in course of the CENTROPE regional development report project. In addition, however, also a number of indicators of some relevance for the further analysis are available here. These include:

Table 2: Additional data available from EUROSTAT Sources on NUTS 2 level: Regional accounts

	First year	Last year	Date	Obs.
NATIONAL ACCOUNTS				
Real growth rate of regional gross value added (GVA) at basic prices at NUTS level 2 - percentage change on previous year	2000	2009	19.04.2011	2,976
Gross fixed capital formation at NUTS level 2 (nama_r_e2gfcf)	1995	2007	04.08.2010	75,072
Compensation of employees at NUTS level 2 (nama_r_e2rem)	1995	2006	18.02.2010	80,722
Employment (in hours worked) at NUTS level 2 (nama_r_e2emp95hw)	1995	2006	18.02.2011	80,723
HOUSEHOLD ACCOUNTS				
Allocation of primary income account of households at NUTS level 2 (nama_r_ehh2p)	1995	2008	30.03.2011	52,543
Net operating surplus and net operating income (resources)	1995	2008	30.03.2012	52,544
Compensation of employees (resources)	1995	2008	30.03.2013	52,545
Property income, received (resources)	1995	2008	30.03.2014	52,546
Property income, paid (uses)	1995	2008	30.03.2015	52,547
Balance of primary income, net (uses)	1995	2008	30.03.2016	52,548
Secondary distribution of income account of households at NUTS level 2 (nama_r_ehh2s)	1995	2008	30.03.2011	73,453
Balance of primary income, net (uses)	1995	2008	30.03.2012	73,454
Disposable income, net (uses)	1995	2008	30.03.2013	73,455
Income of households at NUTS level 2 (nama_r_ehh2inc)	1995	2008	30.03.2011	39,119
Balance of primary income, net (uses)	1995	2008	30.03.2012	39,120
Disposable income, net (uses)	1995	2008	30.03.2013	39,121

Source: EUROSTAT, own derivations.

Additional Data from regional accounts

In contrast to NUTS 3 level data, NUTS 2 level data, however, also include additional information from regional accounts. On this regional level it is thus possible to follow investment (gross fixed capital formation) and compensation per employee as well as hours worked on the level of six broad economic sectors (agriculture & fishing, industry, construction, wholesale and retail trade, hotels and restaurants including transport, financial intermediation and real estate, public administration and community services).

Furthermore also regional household accounts are provided. These allow an estimation of the disposable income of households in a region as well as allowing for estimates of the household income according to different categories (i.e. labour compensation and property income). While thus, as shown in table 2, a much larger set of indicators from the regional accounts are available on a NUTS 2 level than on the NUTS 3 level, also these data are not very recent. None of the indicator has reached the year 2009 yet and for some indicators (e.g. gross fixed capital formation and compensation per employee) data are even older than from 2008.

Additional data on education and science and technology

Under these two headings EUROSTAT provides statistics that refer to education in the ordinary school and university system, as defined in the International Standard Classification of Education (ISCED) and cover full- and part-time-students in public and private establishments but also school-based general education and vocational education/training while exclusively (initial and continuing). Work-based training is not included in these statistics.

Furthermore also data R&D expenditures, R&D personnel in different sectors (differentiated by the business enterprise sector, government sector, higher education sector and the private non-profit sector) and human resources in science and technology (HRST) is provided. In addition aside from R&D expenditures in national currency also the units Euro, Euro per inhabitant, purchasing power standard, purchasing power standard at 2000 prices, and for R&D personnel data full-time equivalent and head counts are available. For human resources in science and technology (HRST) data refer to the number of persons according to the core, education, occupation and broad definition of HRST for different occupation groups, sectors of the economy (27 NACE group) and education levels for the time period from 1994 to 2008.

Table 3: Additional data available from EUROSTAT Sources on NUTS 2 level: Education and Science and Technology

	First year	Last year	Date	Obs.
EDUCATION				
Participation of adults aged 25-64 in education and training, at NUTS levels 1 and 2 (from 2008) - % (trng_ifse_04)	2008	2009	20.01.2011	2,715
Persons aged 25-64 with lower secondary education attainment, by sex and NUTS 2 level (%) (from 2008) (edat_ifse_09)	2008	2009	20.01.2011	2,715
Persons aged 25-64 with upper secondary education attainment, by sex and NUTS 2 level (%) (from 2008) (edat_ifse_10)	2008	2009	20.01.2011	2,715
Persons aged 25-64 with tertiary education attainment by sex and NUTS 2 level (%) (from 2008) (edat_ifse_11)	2008	2009	20.01.2011	2,715
R&D EXPENDITURE & PERSONELL, High Tech employment, Patenting				
Total intramural R&D expenditure (GERD) by sectors of performance and region (rd_e_gerdreg)	1981	2010	11.05.2011	139,355
Total R&D personnel and researchers by sectors of performance, region and sex (rd_p_persreg)	1981	2010	11.05.2011	227,667
Annual data on HRST and sub-groups (NUTS level 0, 1 and 2) (hrst_st_rcat)	1995	2009	20.5.2011	68,280
Annual data on employment in technology and knowledge-intensive sectors at the regional level, by gender (1994-2008, NACE Rev.1.1) (htec_emp_reg)	1994	2008	18.02.2010	902,502
Annual data on employment in technology and knowledge-intensive sectors at the regional level, by level of education (1994-2008, NACE Rev.1.1) (htec_emp_riscd)	1994	2008	18.02.2010	414,316
Annual data on employment in technology and knowledge-intensive sectors at the regional level, by gender (from 2008, NACE Rev.2) (htec_emp_reg2)	2008	2009	20.05.2011	164,406
Annual data on employment in technology and knowledge-intensive sectors at the regional level, by type of occupation (from 2008, NACE Rev.2) (htec_emp_risco2)	2008	2009	20.05.2011	69,268
Annual data on employment in technology and knowledge-intensive sectors at the regional level, by type of occupation (from 2008, NACE Rev.2) (htec_emp_risco2)	2008	2009	20.05.2011	73,954
Patent applications to the EPO by priority year at the regional level (pat_ep_rtot)	1977	2007	09.08.2010	23,198
Patent applications to the EPO by priority year at the regional level by IPC sections and classes (pat_ep_ripc)	1977	2007	09.08.2010	1,178,338
High-tech patent applications to the EPO by priority year at the regional level (pat_ep_rtec)	1977	2007	09.08.2010	1,178,339

Source: EUROSTAT, own derivations.

Finally also some indicators on high tech employment and patenting (at the European patent office) are available. Here high tech employment is once more reported separately by detailed NACE classes while patent statistics are reported according to the *International Patent Classification* (IPC) system and for certain sectors (i.e. high tech-patents and biotech patents). Table 3 reports the indicators that are available as well as listing the update times and the range of years for which these data are available from the EUROSTAT data base.

Table 4: Additional data available from EUROSTAT Sources on NUTS 2 level: Sector Data

	First year	Last year	Date	Obs.
Structural Business Statistics				
Number of local units	2008	2008	07.04.2011	118,898
Wages and Salaries	2008	2008	07.04.2011	118,898
Number of persons employed	2008	2008	07.04.2011	118,898
Share of employment in manufacturing total	2008	2008	07.04.2011	118,898
Regional data (NUTS 06) (sbs_r_nuts03)	1995	2008	20.08.2010	1,801,748
Number of local units	1995	2008	20.08.2010	1,801,748
Wages and Salaries	1995	2008	20.08.2010	1,801,748
Gross investment in tangible goods	1995	2008	20.08.2010	1,801,748
Number of persons employed	1995	2008	20.08.2010	1,801,748
Growth rate of employment (%)	1995	2008	20.08.2010	1,801,748
Share of employment in manufacturing total	1995	2008	20.08.2010	1,801,748
Investment per person employed	1995	2008	20.08.2010	1,801,748
Tourism				
Arrivals in tourist accommodation establishments - regional - annual data (tour_occ_arn2)	1990	2011	19.05.2011	101,006
Nights spent in tourist accommodation establishments - regional - annual data (tour_occ_nin2)	1990	2011	19.05.2011	101,006
Transport				
Road, rail and navigable inland waterways networks at regional level (tran_r_net)	1978	2009	25.02.2011	54,677
Stock of vehicles by category at regional level (tran_r_vehst)	1978	2009	25.02.2011	83,141
Victims in road accidents at regional level (tran_r_acci)	1990	2009	24.02.2011	21,374
Maritime transport of passengers at regional level (tran_r_mapa_nm)	1997	2010	18.02.2011	6,776
Maritime transport of freight at regional level (tran_r_mago_nm)	1997	2010	18.02.2011	8,028
Air transport of passengers at regional level (tran_r_avpa_nm)	1993	2010	18.02.2011	14,349
Air transport of freight at regional level (tran_r_avgo_nm)	1993	2010	18.02.2011	13,169
Maritime transport of passengers at regional level (questionnaire) (tran_r_mapa_om)	1978	2002	27.03.2009	7,266
Maritime transport of freight at regional level (questionnaire) (tran_r_mago_om)	1978	2002	27.03.2009	11,443
Air transport of passengers at regional level (questionnaire) (tran_r_avpa_om)	1978	2002	27.03.2009	13,811
Air transport of freight at regional level (questionnaire) (tran_r_avgo_om)	1978	2002	27.03.2009	10,487

Source: EUROSTAT, own derivations.

Additional data for particular sectors

On a NUTS 2 level EUROSTAT also provides additional, more detailed data on a sectoral basis. In particular here structural business statistics data are reported on a NACE 2 digit (and for some sectors in trade even on a NUTS 3 digit) level for all sectors except for the non-market services (i.e. covering Industry (section B-E), construction (F), Trade (G) and Services (H, I, J, L, M, N and S95)). The unit of observation in this data is the local unit. The indicators reported on a NACE 2 digit level are the number of local units, wages and salaries and the number of employed persons for the NACE 2008 classification, and local units, wages and salaries, number of employed persons and investments in tangible goods for the

NACE 1995 classification. Data according to the NACE 2008 classification is available for the year 2008 only. Data for NACE 1995 classification are available for the years 1995 to 2007.

Furthermore on a NUTS 2 level also additional indicators on tourism (both domestic and foreign tourist arrivals and number of nights spent by domestic and foreign tourists) broken down by type of establishment and a rather large number of indicator on road, rail maritime and air transport are available (see table 4) for the years 1990 to 2011.

Table 5: Additional data available from EUROSTAT Sources on NUTS 2 level: Labour Markets and Information Technology

	First year	Last year	Date	Obs
Labour Market				
Economically active population by sex, age and highest level of education attained, at NUTS levels 1 and 2 (1000)	1999	2009	14.12.2010	121,931
Employment by sex and age, at NUTS levels 1 and 2 (1000) (lfst_r_lfe2emp)	1999	2009	14.04.2011	155,359
Employment by economic activity, at NUTS levels 1 and 2 (1000) (NACE Rev.2) (lfst_r_lfe2en2)	1999	2009	14.12.2010	10,113
Employment by economic activity, at NUTS levels 1 and 2 (1000) (1999-2009, NACE Rev.1.1) (lfst_r_lfe2en1)	1999	2009	14.12.2010	39,748
Employment by full-time/part-time and sex, at NUTS levels 1 and 2 (1000) (lfst_r_lfe2eftpt)	1999	2009	14.12.2010	45,742
Employment by professional status, at NUTS levels 1 and 2 (1000) (lfst_r_lfe2estat)	1999	2009	18.11.2010	20,305
Employment by sex, age and highest level of education attained, at NUTS levels 1 and 2 (1000) (lfst_r_lfe2eedu)	1999	2009	18.11.2010	113,837
Employment and commuting among NUTS level 2 regions (1000) (lfst_r_lfe2ecomm)	1999	2009	18.11.2010	15,494
Average number of usual weekly hours of work in main job, at NUTS levels 1 and 2 (hours) (lfst_r_lfe2ehour)	1999	2009	18.11.2010	4,608
Long-term unemployment (12 months and more), at NUTS levels 1 and 2 (1000; %) (lfst_r_lfu2ltu)	1999	2009	18.11.2010	13,774
Number of households by degree of urbanisation of residence, at NUTS levels 1 and 2 (1000) (lfst_r_lfsd2hh)	1999	2009	18.11.2010	14,222
Arrivals due to internal migration (excluding intra-regional migration) by sex and age, NUTS 2 (migr_r_2arr)	2000	2007	03.12.2009	356,112
Departures due to internal migration (excluding intra-regional migration) by sex and age, NUTS 2 (migr_r_2dep)	2000	2007	03.12.2009	351,037
Information Society Statistics				
Households with access to the Internet at home (isoc_r_iacc_h)	2006	2010	06.04.2011	1,322
Households with broadband access (isoc_r_broad_h)	2006	2010	06.04.2011	2,636
Individuals regularly using the Internet (isoc_r_iuse_i)	2006	2010	06.04.2011	1,323
Individuals who have never used a computer (isoc_r_cux_i)	2006	2010	06.04.2011	1,354
Individuals who ordered goods or services over the Internet for private use (isoc_r_blt12_i)	2006	2010	06.04.2011	1,315

Source: EUROSTAT, own derivations.

Additional Labour market data

Also the NUTS 2 level is the only regional level at which a more detailed breakdown of employment by gender age, educational attainment, full or part time employment (according to a self assessment of the employed), professional status as well as by commuting status (separately for commuting to another NUTS 2 region in the same country and commuting abroad) is reported (see table 5). These data are based on the European Labour Force Survey and thus for quite a number of regions detailed employment data falls below the confidentiality threshold of the Labour Force Survey, which results in a number of missing data problems (see below)

In addition these data also provide some information on immigration and emigration from/to other (NUTS 2) regions within the country (excluding international migration) by reporting migrant arrivals and departures, taken from national administrative records or questionnaires. These data are augmented by information on place to place migration on a NUTS 2 level for a number of countries.²

Additional data on the information society

Finally, NUTS 2 level data under the heading of information society statistics also provides some indication on the internet access and use of information technology of households and individuals by regions. These data are collected by the national statistical offices of ministries and is based on an annual survey of ICT (Information and Communication Technologies) usage in the EU. In this survey regional data is reported by some countries. The indicators include (see table 5):

- Households with access to the Internet at home Households with broadband access
- Individuals regularly using the Internet Individuals who have never used a computer
- Individuals who ordered goods or services over the Internet for private use

² These countries include Bulgaria, Czech Republic, Spain, Hungary, Austria; Romania, Slovenia, Slovakia and Finland among the EU27-

3. Missing data issues with NUTS 2 level Data

In summary thus EUROSTAT provides a rather limited list of NUTS 3 level regional data and a somewhat larger list of NUTS 2 level data that can be used for reporting in the CENTROPE regional development report project. These data, however, have a number of drawbacks. One of these – already discussed above – is the long time lag with which some of the most important economic data become available on a regional level. A second problem is missing data problems. To illustrate the extent of this problem in tables 6 to 8 we have summarized the data situation with respect to a number of NUTS 2 level variables, by listing – on a country to country basis – the first year (columns labelled min_yr) and the last year (columns labelled max_yr) for which we have observations for a particular country. Furthermore this table – in the columns labelled by “n” - reports the average number of regions observed per year in a country on these dependent variables. If this number is smaller than the maximum number of possible regions in the country (shown in the second column of the table and labelled max_n), this implies that in the respective country we are missing some observations on individual regions at least for some years.

These indicators are on labour market and income data:³ In particular for the labour market data we have (see table 6)

- Unemployment rate – which is calculated from data on the economically active (employed and unemployed) and unemployed as the unemployment rate of the 15-64 year old population (ur_tot) and is measured on a scale from 0 to 1
- Youth unemployment rate - which is calculated from data on the economically active and unemployed (in levels) as the unemployment rate of the 15-24 year olds (ur_y) and is measured on a scale from 0 to 1
- Long term unemployment rate – which is calculated as the number of long term unemployed in total economically active and is measured on a scale from 0 to 1
- Employment rate - calculated from data on the economically active and employed as the employment rate of the 15-64 year olds (ur_tot) and is measured on a scale from 0 to 1

As can be seen missing data problems here apply in particular to Denmark, Germany and the UK. For Germany we miss data on the unemployment, youth unemployment, employment and long term unemployment rate for the regions of Brandenburg - Nordost (DE41) and - Brandenburg - Südwest (DE42) for the years 1999-2003, Koblenz (DEB1), Trier (DEB2) and Rheinhessen-Pfalz (DEB3) for the years 2000 and 2001 and for the regions of Chemnitz (DED1) Dresden (DED 2) and Leipzig (DED3) for 1999. For the UK we miss data

³ We focus on these indicators because they have been previously used in the CENTROPE regional development report. We will expand on the list in the course of the project, however.

for North Eastern Scotland (UKM5) and the Highlands and Islands (UKM6) for 1999 and 2000 and for Denmark we miss information before 2007.

For income proxies by contrast we look at:

- GDP per inhabitant - calculated from the indicator on GDP at exchange rates in million € and the total average annual population and measured in 1000 Euro per inhabitant and year (gdp_inh)
- GDP per inhabitant at PPS calculated from the indicator on GDP purchasing power standards in million € and the total average annual population and measured in 1000 Euro per inhabitant and year (gdp_inh_pps)
- Compensation per Employee – calculated from the indicator compensation in million € and the annual average number of employees and measured in thousands of € per worker and year (comp_emp)
- Compensation per working hour- calculated from the indicator compensation in million € and the annual number of hours worked and measured in € per hour (comp_hour)

The situation with respect to GDP per capita indices slightly differs from that of labour market indicators. Here missing observations for Germany and the UK are only due to missing information on Brandenburg - Nordost (DE41) and - Brandenburg - Südwest (DE42) for the years 1999 and 2000 and on North Eastern Scotland (UKM5) and the Highlands and Islands (UKM6) for 1999 and 2000.

The most problematic of the potential dependent variables with respect to data availability is compensation data. This applies to compensation per employee and even more strongly to compensation per hour. For compensation per employee data series for Germany in 1995 are extremely patchy, in Greece all regions for except one report no compensation, in the UK around half of the regions do not report data before 2002 and individual regions in Spain and Italy before 1998. For compensation per hour worked by contrast we have data on only very few countries, and for many other series are very short. We thus use the compensation per employee as an explanatory variable only. For compensation per hour worked by contrast we have data on only very few countries, and for many other countries data series are very short. We thus use the compensation per employee as an explanatory variable only.

In addition in table 7 and 8 we also look at a number of further indicators. These are:

- **Crude migration rate (including corrections)** – which is calculated from crude net immigration as provided by EUROSTAT divided by the population of a region at the beginning of a year. As can be seen from table 7 the data situation with respect to this indicator is rather patchy. In many cases this data start rather late (i.e. after the year 2003 and also for a number of countries (Belgium, Greece and Italy) we miss information on individual regions or years.

- **Imputed migration rate** – Given the rather limited information provided by the crude migration rate as additional indicators we calculate an imputed migration rate that is given by the difference between total population growth in a year minus the natural population growth (i.e. live births minus deaths). This is a similar indicator as the crude migration rate (with the correlation coefficient between the two indicators amounting to 0.98 for those cases where data are available for both indicators) but - as can be seen from table 7 – provides information for a large number of years on a much larger number of countries. The only countries where we have missing observations on individual regions are Germany, Portugal and the UK. For Germany these missing data problems are due to missing information on the same regions in the same years as for employment data which enter the denominator of the migration rate. For Portugal by contrast the missing data problems apply to the regions of Centro (PT16), Lisbon (PT17) and Alentejo (PT18) in the year 1991. Finally for the UK the missing data apply to the regions of UKM5 and UKM6, where we have no information on births and deaths for any of the years.
- **Arrivals, Departures and net population moves due to internal migration** – In addition to account for potential differences of the effects of in- and outmigration we also use the indicator of arrivals and departures⁴ due to internal migration (i.e. migration within country borders) as a percentage of the population at the beginning of the year. These indicators can also be used to calculate the net immigration rate from internal migration by taking the differences between arrivals and departures in percent of the population. As can be seen from table 7 while data on internal arrival and departure rates is available for many countries for the time period 2000-2007, - despite our efforts at increasing sample size by incorporating other information, - we are unable to obtain any data for Germany, France, Greece, Ireland, Portugal and the UK.
- **Net emigration rate from abroad** – Finally, by taking differences between the imputed net migration rate and the net immigration rate due to internal migration we can also calculate the net emigration rate from abroad to a particular region. Since these net migration rates from abroad are imputed from data on total net migration and internal migration, here we miss data on the same countries as for internal migration rates.
- **Share of young population** – which is operationalised by the share of those aged below 25 in the population (youngsh). For which - as can be seen from table 12 – we have data from 1998 to 2009 for all EU countries, with missing observations occurring in the German and UK regions (and years) for which we also have no information as on employment.

⁴ Note that in the regio data base this indicator is provided excluding data for Belgium and excluding the Netherlands for the years 2000 to 2002. To complete our data, this data can, however be augmented with data on place to place migration available from these two countries also provided on the Regio website

- **Birth rate** – measured as births per inhabitant at the beginning of the year (birthr). For this indicator again the missing data problems apply to the same regions as for employment data and to the Portuguese regions of PT16, PT17 and PT18 in the year 1991.
- **Natural population growth rate** – measured as the number of births minus deaths per inhabitant at the beginning of the year (natpopgr) and with similar missing data problems as the birth rate.
- **Participation rate** – that is the number of unemployed and employed per active person (both measured at the population older than 15) which again has the same missing data problems as the birth rate data.
- **Employment growth rate** – measured as the employment level in the current year relative to that of the previous one – i.e. one indicates stagnant employment (empgr), where in addition to the usual data problems for the UK and Germany we also miss data on the French regions of FR25 (for the years 2005 and 2006) and FR72, FR42, and FR53 for the years 2004 and 2003.
- **Net Commuting Rate** – for which we proxy by the number of out commuters in % of the resident population from a region due to a lack of data on inward commuting (commr). Here we miss data only for Cyprus and Latvia. In addition 4 countries the data start rather late.
- **Productivity** – which we proxy by GDP per employed measured in million Euro (prod). For which we again have missing data problems for Germany and 2 regions in the UK.
- **Share of high educated** and **Share of low educated** – measured as the share of employed with a tertiary (ISCED 5 or more) education (highedsh) and the share with a low (ISCED 2 or lower) education (lowedsh), respectively and where missing data problems once are for Germany and the UK.
- **Sectoral shifts in employment** – which is measured by the turbulence index (i.e. the sum of absolute changes in shares over sectors of employment as compared to the previous year) (turb) from employment data on a crude sectoral breakdown which differentiates between employment in agriculture, manufacturing, construction, trade and restaurants and transport (as one group), financial services and real estate, and non-market services. Here again missing data problems apply to Germany and the UK.

Table 6: Data Situation: Income and employment variables

MAX N	unemployment rate			youth unemployment rate			employment rate			Long term rate			GDP per capita			GDP per capita at PPS			compensation per employee			compensation per hour			
	max_yr	min_yr	N	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	
AT	9	1999	2009	9	1999	2009	9	1999	2009	9	1998	2007	9	1998	2007	9	1995	2006	9	1995	2006	9	1995	2006	9
BE	11	1999	2009	11	1999	2009	11	1999	2009	11	1998	2007	11	1998	2007	11	1995	2006	11	1995	2006	11	1995	2006	11
BG	6	2003	2009	6	2003	2009	6	2003	2009	6	1998	2007	6	1998	2007	6	1996	2006	6	2005	2006	6	2005	2006	6
CY	1	2000	2009	1	1999	2009	1	2000	2009	1	1998	2007	1	1998	2007	1	1995	2004	1	.	.	.	.	.	.
CZ	8	1999	2009	8	1999	2009	8	1999	2009	8	1998	2007	8	1998	2007	8	1995	2006	8	1999	2006	8	1999	2006	8
DE	39	1999	2009	36, 7	1999	2009	36, 7	1999, 3	2009, 7	36, 7	1998	2007	38,8	1998	2007	38,8	1995,8	2006	38,4	1999	2006	39	1999	2006	39
DK	1	2007	2009	1	2007	2009	1	2007	2009	1	2007	2007	1	2007	2007	1	1995	2006	1	1995	2006	1	1995	2006	1
EE	1	1999	2009	1	1999	2009	1	1999	2009	1	1998	2007	1	1998	2007	1	1995	2005	1	1995	2005	1	1995	2005	1
ES	17	1999	2009	17	1999	2009	17	1999	2009	17	1998	2007	17	1998	2007	17	1995,3	2006	16,4	2000	2006	17	2000	2006	17
FI	5	1999	2009	4,8	1999	2009	5	1999	2009	4,9	1998	2007	5	1998	2007	5	1995	2006	5	1995	2006	5	1995	2006	5
FR	22	1999	2009	22	1999	2009	22	1999	2009	22	1998	2007	22	1998	2007	22	1995	2006	22	1995	2006	22	1995	2006	22
GR	13	1999	2009	13	1999	2009	13	1999	2009	13	1998	2007	13	1998	2007	13	1999,4	2006	12,4	2000	2006	13	2000	2006	13
HU	7	1999	2009	7	1999	2009	7	1999	2009	7	1998	2007	7	1998	2007	7	2000	2006	7	2004	2006	7	2004	2006	7
IE	2	1999	2009	2	1999	2009	2	1999	2009	2	1998	2007	2	1998	2007	2	1995	2006	2	1998	2006	2	1998	2006	2
IT	21	1999	2009	21	1999	2009	21	1999	2009	21	1998	2007	21	1998	2007	21	1995,3	2006	20,2	.	.	.	.	.	.
LT	1	1999	2009	1	1999	2009	1	1999	2009	1	1998	2007	1	1998	2007	1	1995	2006	1	1995	2006	1	1995	2006	1
LU	1	1999	2009	1	1999	2009	1	1999	2009	1	1998	2007	1	1998	2007	1	1995	2004	1	.	.	.	.	.	.
LV	1	1999	2009	1	1999	2009	1	1999	2009	1	1998	2007	1	1998	2007	1	1995	2006	1	2006	2006	1	2006	2006	1
MT	1	2000	2009	1	2000	2009	1	2000	2009	1	1998	2007	1	1998	2007	1	1999	2006	1	.	.	.	.	.	.
NL	12	1999	2009	12	1999	2009	12	1999	2009	12	1998	2007	12	1998	2007	12	1995	2006	12	2001	2006	12	2001	2006	12
PL	16	1999	2009	16	1999	2009	16	1999	2009	16	1998	2007	16	1998	2007	16	1998,9	2006	15,8	.	.	.	.	.	.
PT	5	1999	2009	5	1999	2009	5	1999	2009	5	1998	2007	5	1998	2007	5	1995	2006	5	2000	2006	5	2000	2006	5
RO	8	1999	2009	8	1999	2009	8	1999	2009	8	1998	2007	8	1998	2007	8	2000	2006	8	2000	2006	8	2000	2006	8
SE	8	1999	2009	8	1999	2009	8	1999	2009	8	1998	2007	8	1998	2007	8	1995	2006	8	1995	2006	8	1995	2006	8
SI	2	2001	2009	2	2001	2009	2	2001	2009	2	1998	2007	2	1998	2007	2	1999	2006	2	.	.	.	.	.	.
SK	4	1999	2009	4	1999	2009	4	1999	2009	4	1998	2007	4	1998	2007	4	1995	2006	4	1995	2006	4	1995	2006	4
UK	37	1999	2009	36, 7	1999	2009	36, 7	1999, 7	2009, 7	36, 7	1998, 7	2007	36,6	1998, 7	2007	36,6	1997,6	2006	27,4	.	.	.	.	.	.

Source: EUROSTAT.

Table 7: Data Situation: Mobility indicators

	net_migr			netmigr1			int_dep_r			int_arr_rate			int_nmig_rate			netmig_for		
	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n
AT	2002	2008	9	1990	2008	9	2000	2007	9	2000	2007	9	2000	2007	9	2000	2007	9
BE	2000.19	2007	10.5	1990	2007	11	2000	2006	11	2000	2006	11	2000	2006	11	2000	2006	11
BG	2000	2008	6	1990	2008	6	2000	2007	6	2000	2007	6	2000	2007	6	2000	2007	6
CY	2000	2008	1	1990	2008	1	2000	2007	1	2000	2007	1	2000	2007	1	2000	2007	1
CZ	2005	2008	8	1992	2008	8	2000	2007	8	2000	2007	8	2000	2007	8	2000	2007	8
DE	2005	2007	39	1990.51	2008	37.4	.	.	.	.	.	.	.	.	.	.	.	.
DK	2007	2008	1	1990	2008	1	2000	2007	1	2000	2007	1	2000	2007	1	2000	2007	1
EE	2005	2008	1	1990	2008	1	2000	2007	1	2000	2007	1	2000	2007	1	2000	2007	1
ES	2005	2008	17	1990	2008	17	2000	2007	17	2000	2007	17	2000	2007	17	2000	2007	17
FI	2007	2008	5	1990	2007.82	4.9	2000	2007	5	2000	2007	5	2000	2007	5	2000.18	2007	4.9
FR	2000	2007	22	1990	2008	22	.	.	.	.	.	.	.	.	.	.	.	.
GR	2007.04	2008	12.5	1990	2008	13	.	.	.	.	.	.	.	.	.	.	.	.
HU	2003	2008	7	1990	2008	7	2000	2007	7	2000	2007	7	2000	2007	7	2000	2007	7
IE	2007	2008	2	1998	2008	2	.	.	.	.	.	.	.	.	.	.	.	.
IT	2002.07	2008	20.3	1990	2008	21	2000	2005	21	2000	2005	21	2000	2005	21	2000	2005	21
LT	2000	2008	1	1990	2008	1	2000	2007	1	2000	2007	1	2000	2007	1	2000	2007	1
LU	2000	2008	1	1990	2008	1	2000	2007	1	2000	2007	1	2000	2007	1	2000	2007	1
LV	2003	2008	1	1990	2008	1	2000	2007	1	2000	2007	1	2000	2007	1	2000	2007	1
MT	2001	2008	1	1996	2008	1	2000	2007	1	2000	2007	1	2000	2007	1	2000	2005	1
NL	2003	2008	12	1990	2008	12	2000	2007	12	2000	2007	12	2000	2007	12	2000	2007	12
PL	2001	2008	16	1995	2008	16	2000	2007	16	2000	2007	16	2000	2007	16	2000	2007	16
PT	2000	2008	5	1991.59	2008	4.9	.	.	.	.	.	.	.	.	.	.	.	.
RO	2002	2008	8	1990	2008	8	2000	2007	8	2000	2007	8	2000	2007	8	2000	2007	8
SE	2000	2008	8	1990	2008	8	2000	2007	8	2000	2007	8	2000	2007	8	2000	2007	8
SI	2003	2008	2	1990	2008	2	2000	2007	2	2000	2007	2	2000	2007	2	2000	2007	2
SK	2003	2008	4	1996	2008	4	2000	2007	4	2000	2007	4	2000	2007	4	2000	2007	4
UK	.	.	.	1990.72	2003	31.7	.	.	.	.	.	.	.	.	.	.	.	.

Source: EUROSTAT.

Table 8: Data situation with respect to other variables

	youngsh			birthr			nat_popgr			prate			employment growth			out-commuting rate		
	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n
AT	1998	2009	9	1990	2008	9	1999	2009	9	1999	2009	9	2000	2009	9	1999	2009	9
BE	1998	2008	11	1990	2007	11	1999	2009	11	1999	2009	11	2000	2009	11	1999	2009	11
BG	1998	2009	6	1990	2008	6	2003	2009	6	2003	2009	6	2004	2009	6	2003	2009	6
CY	1998	2009	1	1990	2008	1	1999	2009	1	1999	2009	1	2000	2009	1	.	.	.
CZ	1998	2009	8	1992	2008	8	1999	2009	8	1999	2009	8	2000	2009	8	1999	2009	8
DE	1998	2009	38.8	1990.5	2008	37.5	1990.5	1999.3	36.7	1999.3	2009	36.7	2000.2	2009	36.6	1999.3	2009	36.7
DK	2007	2009	1	1990	2008	1	2007	2009	1	2007	2009	1	2008	2009	1	.	.	.
EE	1998	2009	1	1990	2008	1	1999	2009	1	1999	2009	1	2000	2009	1	1999	2007	1
ES	1998	2009	17	1990	2008	17	1999	2009	17	1999	2009	17	2000	2009	17	1999	2009	17
FI	1998	2009	5	1990	2007.8	4.9	1999	2009	5	1999	2009	5	2000	2009	5	1999	2009	4.9
FR	1998	2009	22	1990	2008	22	1999	2009	22	1999	2009	22	2000	2009	22	1999	2009	22
GR	1998	2009	13	1990	2008	13	1999	2009	13	1999	2009	13	2000	2009	13	1999	2008.6	10.8
HU	1998	2009	7	1990	2008	7	1999	2009	7	1999	2009	7	2000	2009	7	1999	2009	7
IE	1998	2009	2	1998	2008	2	1999	2009	2	1999	2009	2	2000	2009	2	2002	2006	2
IT	1998	2009	21	1990	2008	21	1999	2009	21	1999	2009	21	2000	2009	21	1999	2009	21
LT	1998	2009	1	1990	2008	1	1999	2009	1	1999	2009	1	2000	2009	1	1999	2007	1
LU	1998	2009	1	1990	2008	1	1999	2009	1	1999	2009	1	2000	2009	1	1999	2007	1
LV	1998	2009	1	1990	2008	1	1999	2009	1	1999	2009	1	2000	2009	1	.	.	.
MT	1998	2009	1	1996	2008	1	1996	2009	1	2000	2009	1	2001	2009	1	2000	2007	1
NL	1998	2009	12	1990	2008	12	1999	2009	12	1999	2009	12	2000	2009	12	1999	2009	11.8
PL	1998	2009	16	1995	2008	16	1999	2009	16	1999	2009	16	2000	2009	16	2004	2009	16
PT	1998	2009	5	1991.6	2008	4.9	1999	2009	5	1999	2009	5	2000	2009	5	1999	2009	5
RO	1998	2009	8	1990	2008	8	1999	2009	8	1999	2009	8	2000	2009	8	2004	2008.9	7.7
SE	1998	2009	8	1990	2008	8	1999	2009	8	1999	2009	8	2000	2009	8	2005	2009	8
SI	1998	2009	2	1990	2008	2	2001	2009	2	2001	2009	2	2002	2009	2	2001	2007	2
SK	1998	2009	4	1996	2008	4	1999	2009	4	1999	2009	4	2000	2009	4	1999	2009	4
UK	1998.1	2008	36.7	1990.7	2003	31.7	1999.1	2009	36.6	1999.1	2009	36.6	2000.1	2009	36.6	1999.2	2009	36.4

Source: EUROSTAT.

Table 8 (cont'd)

prod			gdpgr			gdp_pc growth			wage growth			investments			high education share			
max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	
AT	1999	2007	9	1996	2007	9	1999	2007	9	1996	2006	9	1995	2007	9	1999	2009	9
BE	1999	2007	11	1996	2007	11	1999	2007	11	1996	2006	11	1995	2007	11	1999	2009	11
BG	2003	2007	6	1996	2007	6	1999	2007	6	1997	2006	6	.	.	.	2003	2009	6
CY	1999	2007	1	1996	2007	1	1999	2007	1	1996	2004	1	1995	2007	1	1999	2009	1
CZ	1999	2007	8	1996	2007	8	1999	2007	8	1996	2006	8	1995	2007	8	1999	2009	8
DE	1999.2	2007	36.1	1996	2007	39	1999	2007	38.6	1996.8	2006	38.4	1995	2007	39	1999.3	2009	36.7
DK	2007	2007	1	1996	2007	1	.	.	.	1996	2006	1	1995	2007	1	2007	2009	1
EE	1999	2007	1	1996	2007	1	1999	2007	1	1996	2005	1	1995	2007	1	1999	2009	1
ES	1999	2007	17	1996	2007	17	1999	2007	17	1996.3	2006	16.3	1995	2007	17	1999	2009	17
FI	1999	2007	5	1996	2007	5	1999	2007	5	1996	2006	5	1995	2007	5	1999	2009	5
FR	1999	2007	22	1996	2007	22	1999	2007	22	1996	2006	22	1995	2007	22	1999	2009	22
GR	1999	2007	13	1996	2007	13	1999	2007	13	2000.3	2006	12.3	1995	2007	13	1999	2009	13
HU	1999	2007	7	1996	2007	7	1999	2007	7	2001	2006	7	1995	2007	7	1999	2009	7
IE	1999	2007	2	1996	2007	2	1999	2007	2	1996	2006	2	1995	2007	2	1999	2009	2
IT	1999	2007	21	1996	2007	21	1999	2007	21	1996.3	2006	20.1	1995	2007	21	1999	2009	21
LT	1999	2007	1	1996	2007	1	1999	2007	1	1996	2006	1	1995	2007	1	1999	2009	1
LU	1999	2007	1	1996	2007	1	1999	2007	1	1996	2004	1	.	.	.	1999	2009	1
LV	1999	2007	1	1996	2007	1	1999	2007	1	1996	2006	1	1995	2007	1	1999	2009	1
MT	2000	2007	1	1996	2007	1	1999	2007	1	2000	2006	1	1995	2007	1	2000	2009	1
NL	1999	2007	12	1996	2007	12	1999	2007	12	1996	2006	12	1995	2007	12	1999	2009	12
PL	1999	2007	16	1996	2007	16	1999	2007	16	1999.9	2006	15.8	1995	2007	16	1999	2009	16
PT	1999	2007	5	1996	2007	5	1999	2007	5	1996	2006	5	1995	2007	5	1999	2009	5
RO	1999	2007	8	1996	2007	8	1999	2007	8	2001	2006	8	1995	2007	8	1999	2009	8
SE	1999	2007	8	1996	2007	8	1999	2007	8	1996	2006	8	1995	2007	8	1999	2009	8
SI	2001	2007	2	1996	2007	2	1999	2007	2	2000	2006	2	1995	2007	2	2001	2009	2
SK	1999	2007	4	1996	2007	4	1999	2007	4	1996	2006	4	1995	2007	4	1999	2009	4
UK	1999.1	2007	36.6	1996	2007	37	1999.1	2007	36.6	1998.7	2005.9	25.6	1995	2007	35	1999.1	2009	36.7

Source: EUROSTAT.

Table 8 (cont'd)

low education share			R&D Share			Sector shares (all)			Turbulence			inverse herfindahl			national unemployment rate		
max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n	max_yr	min_yr	n
AT	1999	2009	1998	2007	9	1996	2007	9	1997	2007	9	1996	2007	9	1990	2009	9
BE	1999	2009	2002	2007	11	1996	2007	11	1997	2007	11	1996	2007	11	1990	2009	11
BG	2003	2009	2001.4	2007	6	1996	2007	6	1997	2007	6	1996	2007	6	1990	2009	6
CY	1999	2009	1998	2007	1	1996	2007	1	1997	2007	1	1996	2007	1	1990	2009	1
CZ	1999	2009	2001	2007	8	1996	2007	8	1997	2007	8	1996	2007	8	1990	2009	8
DE	1999.3	2009	1995.4	2006.8	36.7	1996	2007	39	1997	2007	39	1996	2007	39	1990	2009	39
DK	2007	2009	1995	2007	1	1996	2007	1	1997	2007	1	1996	2007	1	1990	2009	1
EE	1999	2009	1998	2007	1	1996	2007	1	1997	2007	1	1996	2007	1	1990	2009	1
ES	1999	2009	1995	2007	17	1996.3	2007	16.5	1997.3	2007	16.5	1996.3	2007	16.5	1990	2009	17
FI	1999	2009	1997.5	2007	5	1996	2007	5	1997	2007	5	1996	2007	5	1990	2009	5
FR	1999	2009	1995	2004	22	1996	2007	22	1997	2007	22	1996	2007	22	1990	2009	22
GR	1999	2009	1995	2005	13	1999.6	2007	12.6	2000.5	2007	12.6	1999.6	2007	12.6	1990	2009	13
HU	1999	2009	1999	2007	7	1996	2007	7	1997	2007	7	1996	2007	7	1990	2009	7
IE	1999	2009	2002	2007	2	1996	2007	2	1997	2007	2	1996	2007	2	1990	2009	2
IT	1999	2009	1995.3	2005	21	1996	2007	21	1997	2007	21	1996	2007	21	1990	2009	21
LT	1999	2009	1995	2007	1	1996	2007	1	1997	2007	1	1996	2007	1	1990	2009	1
LU	1999	2009	2000	2007	1	1996	2007	1	1997	2007	1	1996	2007	1	1990	2009	1
LV	1999	2009	1995	2007	1	1996	2007	1	1997	2007	1	1996	2007	1	1990	2009	1
MT	2000	2009	2002	2007	1	1999	2007	1	2000	2007	1	1999	2007	1	1990	2009	1
NL	1999	2009	1997.2	2003	12	2001	2007	12	2002	2007	12	2001	2007	12	1990	2009	12
PL	1999	2009	2000	2007	16	1998.9	2007	15.8	1999.9	2007	15.8	1999	2007	16	1990	2009	16
PT	1999	2009	1997.6	2007	5	1996	2007	5	1997	2007	5	1996	2007	5	1990	2009	5
RO	1999	2009	2001	2007	8	2000	2007	8	2001	2007	8	2000	2007	8	1990	2009	8
SE	1999	2009	2003	2007	8	1996	2007	8	1997	2007	8	1996	2007	8	1990	2009	8
SI	2001	2009	2003	2007	2	1996	2007	2	1997	2007	2	1996	2007	2	1990	2009	2
SK	1999	2009	2000	2007	4	1996	2007	4	1997	2007	4	1996	2007	4	1990	2009	4
UK	1999.1	2009	2004.4	2007	36.7	1996.1	2007	35.1	1997.1	2007	34.8	2001.8	2006.9	34.2	1990	2009	37

Source: EUROSTAT.

- **Diversity** – which is measured by the inverse herfindahl index over the sectoral share (herf_inv) based on the same sectoral breakdown as the turbulence index and where missing data problems exist for the same regions as above.
- **Sectoral employment shares** – of agriculture (agsh), industry (indsh), construction (consh), transport and trade (tradsh), financial services (finsh), non-market services (nmssh). These once more have missing data for two regions and years in the UK and 7 regions and 2 years in Germany

4. Individual (Micro-) Level Data

Summarising therefore aside from the low number of indicators on a NUTS 3 level and a rather long time lag to publication of important economic data, EUROSTAT indicators are also burdened with some missing data problems. In a number of cases during the project we therefore augment data with other data available to the partners of the CENTROPE regional development report project. In particular so far we have drawn on three such additional data sources:

4.1 The European Labour Force Survey

The European Labour Force Survey provided by EUROSTAT is a large scale survey conducted either on a quarterly or continuous basis in all of the EU-countries. It is one of the primary sources for regional labour market statistics of the EU but also provides information on a number of further characteristics of the population of the EU 27 such as for instance on the regional stock of active aged by country of birth, working hours, educational attainment levels (tertiary educated with ISCED level 5 or more education, intermediary education level – ISCED 3 or 4. and low educated ISCED level 2 or less) and (ILO) employment status as well as ISCO occupation groups and other many other variables. These data in principle cover the period from 1971 to 2009 for some countries. However, since data before 2004 are often available only for the EU15 countries in this project we focus only on the more recent years from these data which allow us to calculate employment and unemployment rates as well as population shares of foreign born and natives by educational attainment, region of birth and NUTS 2 region of residence in the EU.

Furthermore, although we take great care to recode changing NUTS 2 codes wherever possible, repeated changes in the definition of NUTS 2 regions and, changes in the system of encoding labour market status as well as education variables and many others cause serious complications with comparison of indicators over time for certain countries. Furthermore, the repeated structural breaks in the method of compiling the ELFS raise some issues concerning the comparability of data for one country over time.⁵ Table 9⁶ presents the features of the data set that we can derive from cleaning and adjusting of the ELFS by listing the number of regions as well as the years covered by country and the potential structural break points in the data.

⁵ See http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/index.htm for a detailed description of the ELFS as well as confidence levels and a description of breaks in the data

⁶ Taken from the EUROSTAT ELFS homepage http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/index.htm.

Table 9: Data availability and structural breaks in the European Labour Force Survey

Country	Regions	Years	Breaks due to method		Breaks due to census or definitions	
Austria	9	1995-2008	1999	2004	2003	
Belgium	11	1996-2008	1999		-	
Bulgaria	6	2006-2008	-		-	
Cyprus	1	2000-2008	2004		-	
Czech	8	2002-2008	-		-	
Denmark	1	1995-2008	1999		2007	
Estonia	1	1998-2008	2000		-	
Spain	19	1995-2008	1996	1999	2005	2001
Finland	5	1999-2008	1998	2000	-	
France	22	1995-2008	2003		2003	
Greece	13	1995-2008	1996	1998	2004	
Hungary	7	2001-2008	2003		-	
Ireland	2	2006-2008	-		-	
Italy	21	2005-2009	-		-	
Lithuania	1	1998-2008	2002		1998	
Luxemburg	1	1995-2008	2003	2007	-	
Latvia	1	2004-2008	-		-	
Malta	1	2005-2008	-		-	
Netherlands	12	1999-2008	2000		2003	
Poland	16	2004-2008	-		-	
Portugal	7	1999-2008	-		-	
Romania	8	2004-2008	-		-	
Slovenia	2	2002-2008	-		-	
Sweden	8	1999-2008	2001		2005	
Slovakia	4	2003-2008	-		-	
UK	37	1999-2008	-		-	

Source: ELFS. http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/index.htm. Own calculations.

There are also a number of further caveats that have to be taken into consideration when interpreting these data. The first of these is that, as with all survey based data, the ELFS suffers from an element of non-response. For instance, in the context of an application to determining the number of foreign born residing in the EU and CENTROPE as well as the extent of cross-border commuting (see Römisch et al. 2010) this problem is most severe with respect to information concerning the region of birth and the educational attainment of the respondents.

Table 10: National unemployment rates in the EU27 countries by year (%)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AT	4.3	5.3	5.1	5.5	4.7	4.7	4.0	4.8	4.8	5.3	5.2	4.7	4.4	3.8
BE		9.5	9.0	9.3	8.6	6.6	6.2	6.9	7.7	7.4	8.4	8.2	7.5	7.0
BG												9.0	6.9	5.6
CY						5.0	4.0	3.3	4.1	4.3	5.3	4.5	3.9	3.7
CZ								7.0	7.5	8.2	7.9	7.1	5.3	4.4
DK	7.0	6.8	5.4	5.0	5.1	4.5	4.2	4.3	5.4	5.2	4.8	3.9	3.8	3.3
EE				9.5	11.6	13.1	12.4	9.4	10.7	10.0	7.9	5.9	4.7	5.5
ES	22.6	22.1	20.7	18.7	15.4	13.8	10.4	11.2	11.3	11.1	9.1	8.5	8.2	11.3
FI					11.7	11.1	10.3	10.4	10.5	10.4	8.4	7.7	6.9	6.4
FR	11.8	12.4	12.6	12.1	12.0	10.2	8.6	8.7	8.6	9.2	8.9	8.8	8.0	7.4
GR	9.1	9.7	9.6	10.8	11.9	11.2	10.4	9.9	9.3	10.2	9.8	8.9	8.3	7.7
HU							5.7	5.6	5.8	5.8	7.2	7.5	7.4	7.8
IE												4.4	4.6	6.0
IT											7.7	6.8	6.1	6.7
LT				13.7	13.4	15.9	16.8	13.0	12.9	11.3	8.3	5.6	4.3	5.8
LU	2.9	3.3	2.5	2.8	2.4	2.3	1.8	2.6	3.7	5.1	4.5	4.7	4.1	5.1
LV										9.9	8.9	6.8	6.0	7.5
MT											7.3	6.9	6.5	6.0
NL					3.6	2.7	2.1	2.6	3.6	4.6	4.7	3.9	3.2	2.8
PL										19.1	17.7	13.9	9.6	7.1
PT				4.6	4.6	3.9	3.9	4.6	6.2	6.5	7.8	7.8	8.1	7.7
RO										7.7	7.2	7.3	6.4	5.8
SE				7.6	7.6	5.5	4.7	5.0	5.6	6.7	7.5	7.1	6.2	6.2
SI								5.9	6.5	6.0	6.5	6.0	4.8	4.4
SK									17.1	18.6	16.3	13.4	11.1	9.5
UK				6.0	6.0	5.6	4.7	5.0	4.8	4.6	4.8	5.4	5.3	5.6

Source: ELFS.

The second caveat of ELFS data is that it represents only a sample of the population and that in the period observed here it has been subject to repeated revision. This has a number of implications for our study. First of all it implies that individual aggregates may be too small to allow a reliable estimate of the population size of a particular group. In this respect EUROSTAT (see http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/index.htm) provides country specific upper and lower confidence bound under which estimated numbers should either be highlighted to signify low reliability (upper bound) or suppressed altogether when they fall below the lower bound. Second of all, however, this sample structure also implies that the ELFS is subject to sampling error and that thus there may be large fluctuations in the estimates of the size in particular of small estimation groups. which are likely to be aggravated by changes in definitions. To illustrate this problem table 4 reports the development of national unemployment rates, highlighting the instances in which there seem to be implausible developments in the data.

4.2 THE LAMO/FAMO Data Set

Data on migration and commuting intentions

The second dataset which we use to address the issue of migration, commuting and labour market integration is a data set on mobility intentions in CENTROPE collected within the scope of the Austrian "Labour Market Monitoring" (LAMO) project (see *Hudler-Seitzberger and Bittner. 2005; Huber. et al.. 2007*). The aim of this project was to gain information on the willingness to commute and migrate in the CENTROPE region. We have available three waves of this survey (with the first one taking place between November 2004 and February 2005. the second between November 2006 and February 2007 and the last in December 2010) so that we are able to report on the evolution of migration and commuting intentions over a period for more than 5 years.¹

These data were collected by personal face-to-face interviews in the Hungarian, Slovak and Czech regions of "CENTROPE" and in the first wave also in the Austrian CENTROPE. In the 3rd wave also residents in Vienna were interviewed. In these waves, 14.482 individuals were interviewed, 10.195 of them living in the CENTROPE regions of the new member states (Table 10). According to the sampling plan, random quota sampling was applied to the working-age population of age 15 and older. Quotas were set by municipalities following a spatial analysis of the region. Municipalities were chosen based on characteristics such as

¹ A fourth wave was conducted in 2008/09 but only included Vienna, Bratislava region and Trnava region. We do not report results for this wave; results are available in *Nowotny - Hierländer (2009)*.

municipality size, population growth and structure, employment growth and unemployment rates as well as accessibility. Within the municipalities, random sampling was applied.²

Table 11: Sample size of the LAMO household survey by waves and sub-regions

Nuts 3	Year of Observation			Total
	2004/05	2006/07	2010	
	Absolute			
South Moravia	629	1,314	1,120	3,063
Győr	514	463	662	1,639
Vas	326	270	400	996
Vienna	1,044		1,561	2,605
Lower Austria	1,392			1,392
Burgenland	290			290
Bratislava region	793	749	787	2,329
Trnava region	746	707	715	2,168
Total NMS	3,008	3,503	3,684	10,195
Total	5,734	3,503	5,245	14,482

Source: LAMO household surveys 2004-2005 and 2006-2007, 2010.

These data are especially suitable for our analysis because they consist not only of information on the willingness to migrate and commute. but also include a large set of personal characteristics which allows us to analyse mobility decisions based on individual characteristics as well as the structure of those willing to be mobile. In addition to socio-economic characteristics respondents were also asked questions concerning their previous migration and commuting experiences, their plans for future cross-border mobility, their expectations concerning a workplace abroad and their motives for wishing to stay at home or to be mobile. This allows us to differentiate between intended migration and commuting and also to analyse the difference in structure between these two groups.

These data, however, also have some drawbacks: These result primarily from the sample size. Although the data were collected in such a way that they should be representative of the CENTROPE region, as with the ELFS the small sample size implies rather large confidence intervals when drawing conclusions on the overall population of the CENTROPE regions. Furthermore, the share of persons, who have rather concrete mobility intentions in the CENTROPE region is rather low. this implies that statements referring to structure of those willing to be mobile based on an individual wave will by necessity be based on few observations only.

² The underlying sampling plan was designed on the basis of an in-depth background analysis of the regional structure (Krajasits et al., 2005). The survey is representative of the CENTROPE population over 15 years of age.

Data on enterprises

Furthermore we also use data from a questionnaire conducted among 8.299 enterprises³ in Austria (3.001 enterprises), the Czech Republic (2.298), Slovakia (1.500) as well as Hungary (1.500) of which 4.291 resided in one of the NUTS 3 regions of CENTROPE (see table 12 for details). These data were also collected in the framework of the FAMO/LAMO and AFLA projects by telephone interviews in the time period from September to November 2010. Sampling was by random quota sampling with quotas set by NUTS 2 regions, sector and enterprise size. In contrast to many other questionnaires which either focus exclusively on manufacturing or on larger enterprises, care was taken to also have a fair amount of small and medium sized enterprises in the sample and to cover the whole economy (including the services sectors). Thus in our sample around 45% of the enterprises have less than 10 employees and over 75% have less than 50, while only 8% have more than 250 employees. Also the absolute majority of the enterprises interviewed in the CENTROPE region are engaged in the service sector.

Furthermore among the interviewed enterprises 84.8% are owned by natives while 11.9% are owned by international co-operations and a further 3.2% are joint ventures or have at least a partial international ownership. Similarly the vast majority of our enterprises are single establishment enterprises (83.6%) while 16.8% are headquarters of a multi-establishment enterprise and a further 5.7% are a branch (establishment) of a larger enterprise.

The sampling plan was set so as to be representative at the national level. It can thus not be guaranteed that the sample is also representative at the NUTS 3 level. Nonetheless the features of the data broadly accord with the results of previous literature (e.g. Pennerstorfer, 2011, Rozmahel et al. 2011). A large share of small enterprises is found in Vienna and in Bratislava, but also in the Hungarian CENTROPE and the share of market service sector enterprises is larger in the Austrian CENTROPE than in its new member state parts. Yet, there are also some features of the data, in particular with respect to sectoral structure, which do not accord with previous results. Here in particular the vastly oscillating shares of non-market services and construction as well as the obvious under sampling of agriculture seem to question the representativity of the data on a sectoral level for individual regions.

³ Since in this questionnaire no clear differentiation was made between firms and establishments, we here use the term enterprise, throughout.

Table 12: Sample Size and Sample structure of the FAMO/AFLA enterprise level data by CENNTROPE regions

	Győr	Vas	Vienna	Burgen-land	Lower Austria	South Moravia	Bratis-lava region	Trnava region	CENT-ROPE
No. of observations	292	214	1501	143	247	396	1096	402	4,291
Owner (in %)									
Native	88.0	87.9	88.3	92.3	93.1	77.0	82.8	72.6	84.8
Foreign	9.9	6.5	9.6	4.2	4.0	17.2	11.9	26.9	11.9
Joint Venture	2.1	5.6	1.7	3.5	2.8	5.8	5.4	0.5	3.2
Organization (in %)									
Single Company	88.7	92.5	73.3	79.0	76.9	85.4	91.7	95.5	83.6
Headquarter	3.8	3.7	18.9	16.8	19.8	7.1	3.8	2.2	10.6
Branch office	7.5	3.7	7.5	4.2	3.2	7.6	4.5	2.2	5.7
Age (in years. %)									
1 to 4 years	3.1	8.9	2.3	6.3	1.6	0.5	18.3	5.7	7.0
5 to 9 years	10.3	11.7	7.9	19.6	15.4	14.6	25.6	28.6	16.2
10 or more years	84.9	79.0	86.0	74.1	83.0	84.3	56.0	65.7	75.3
Size (No. of employed. %)									
0 to 9	57.5	57.0	54.8	39.2	33.6	16.2	42.4	40.3	45.3
10 to 49	22.6	23.8	31.4	39.2	37.7	49.5	32.3	40.8	33.8
50 to 249	15.1	15.0	10.5	11.9	15.0	23.5	12.2	9.5	12.9
250 or more	4.8	4.2	3.3	9.8	13.8	10.9	13.0	9.5	8.0
Sector (in %)									
Agriculture	2.4	2.8	0.8	0.0	1.2	2.3	0.7	3.7	1.4
Manufacturing	14.7	15.4	12.1	9.1	10.1	11.9	3.9	11.2	10.0
Construction	11.3	10.3	4.4	23.8	10.5	12.6	6.9	1.7	7.3
market services	62.3	60.3	59.5	59.4	64.4	40.7	56.3	44.8	56.1
non market services	9.2	11.2	23.2	7.7	13.8	32.6	32.1	38.6	25.2

Source: FAMO/AFLA Data. own calculations.

4.3 FDI Markets.com

Regional data on foreign direct investment finally is taken from fdimarkets.com, a commercial database tracking global cross border Greenfield and expansion investments. Joint ventures are only included where they lead to a new physical operation. However Mergers & acquisitions (M&A) and other equity investments are not tracked. Foreign investments are recorded independent of the size of the project to be included. The information sources for the fdimarkets.com database are: Financial Times newswires, around 9000 media sources,

project data received from over 1000 industry organisations and investment agencies, data purchased from market research and publication companies, whereby information from these sources are cross-validated with company sources.

The drawback is that this database does not include M&A investments. This is however compensated by the fact that the database offers up-to-date data at the European regional level (in fact data are available at the city level) including a sectoral breakdown. It is a very comprehensive data set, from which we extracted 31.547 individual FDI projects in the European Union for the period January, 2003 to March. 2010, 793 of these projects occurred in the CENTROPE regions.

The raw data were available at the city level, but were aggregated in general to the NUTS 2 regional level and for certain CENTROPE regions to the NUTS-3 level, to keep analysis and results manageable and to have enough observations for each region and year. 90% of the aggregation of the 31.547 individual projects was done automatically, given that individual cities could be uniquely related to a NUTS 2 region. The remaining 10% (more than 3000) had to be assigned manually, partly due to spelling errors in the original database, partly because the location could not be uniquely assigned to a region, partly because the location given in the fdi-database and our data on the correspondence of cities to NUTS 2 regions did not match.

The original data offers a rich sectoral breakdown, which however is prone to misinterpretations. To keep analysis manageable the sectoral breakdown was cleared and aggregated to five sectors of economic activity:

1. Headquarters, business services, innovation: Business and innovation investments include investments into: design, development and testing, education and training, research and development.
2. Retail trade and transport
3. Construction and other services. Other services include: customer contact centres. ICT and internet infrastructure, maintenance and servicing, sales, marketing and support, shared services centres and technical support services
4. High and medium technology intensive industries. They include: Aerospace, alternative/renewable energy, automotive components, automobile production, biotechnology, chemicals, consumer electronics, electronic components, industrial machinery, equipment and tools, medical devices, pharmaceuticals, semiconductors, space and defence industry.

5. Low technology intensive industries and electricity. They include beverages, building and construction materials, ceramics and glass, coal, food and tobacco, metals. Minerals, plastics, rubber, textiles and wood products.⁴

⁴ For details about the aggregation of the initial, raw data contact: roemisch@wiw.ac.at

Annex 1: List of Indicators with respect to the structure of agricultural holdings by NUTS. main indicators (ef_r_nuts)

Total number of holdings
Total Agricultural area (AA)
Total standard gross margin (ESU)
Number of holdings in less favoured area
Agricultural area in less favoured area
Number of holdings in mountain area
Agricultural area in mountain area
Number of holdings with less than 5 ha AA
Number of holdings with 5 to 10 ha AA
Number of holdings with 10 to 20 ha AA
Number of holdings with 20 to 30 ha AA
Number of holdings with 30 to 50 ha AA
Number of holdings with >=50 ha AA
Total AA (in ha) of holdings with less than 5 ha AA
Total AA (in ha) of holdings with 5 to 10 ha AA
Total AA (in ha) of holdings with 10 to 20 ha AA
Total AA (in ha) of holdings with 20 to 30 ha AA
Total AA (in ha) of holdings with 30 to 50 ha AA
Total AA (in ha) of holdings with >=50 ha AA
Number of holdings with less than 2 ESU
Number of holdings with 2 to 4 ESU
Number of holdings with 4 to 8 ESU
Number of holdings with 8 to 16 ESU
Number of holdings with 16 to 40 ESU
Number of holdings with 40 to 100 ESU
Number of holdings with 100 ESU and over
Total AA of holdings with less than 2 ESU
Total AA of holdings with 2 to 4 ESU
Total AA of holdings with 4 to 8 ESU
Total AA of holdings with 8 to 16 ESU
Total AA of holdings with 16 to 40 ESU
Total AA of holdings with 40 to 100 ESU
Total AA of holdings with 100 ESU and over
AA owner farmed
AA tenant farmed
AA share farmed or in other modes of tenure
Total area (D.E.F.G.H) in ha

Number of holdings with arable land (D)
Arable land (in ha)
AA of holdings with arable land (in ha)
Number of holdings with cereals (D/01-D/08)
Cereals (D/01-D/08) (in ha)
Number of holdings with common wheat and spelt (D/01)
Common wheat and spelt (in ha)
Number of holdings with durum wheat (D/02)
Durum wheat (D/02) (in ha)
Number of holdings with rye (D/03)
Rye (D/03) (in ha)
Number of holdings with barley (D/04)
Barley (D/04) (in ha)
Number of holdings with oats (D/05)
Oats (D/05) (in ha)
Number of holdings with grain maize (D/06)
Grain maize (D/06) (in ha)
Number of holdings with rice (D/07)
Rice (D/07) (in ha)
Number of holdings with other cereal (D/08)
Other cereal (D/08) (in ha)
Number of holdings with dried vegetables (D/09)
Dried vegetables (D/09) (in ha)
Number of holdings with root crops (D/10-D/12)
Root crops (D/10-D/12) (in ha)
Number of holdings with potatoes (D/10)
Potatoes (D/10) (in ha)
Number of holdings with sugar-beet (D/11)
Sugar-beet (D/11) (in ha)
Number of holdings with fodder roots and brassica (D/12)
fodder roots and brassica (D/12) (in ha)
Number of holdings with industrial plants (D/13)
Industrial plants (D/13) (in ha)
Number of holdings with fresh vegetables. melons and strawberries (D/14 + D/15)
Fresh vegetables. melons and strawberries (D/14 + D/15) (in ha)
Number of holdings with flowers and ornamental plants (D/16 + D/17)
flowers and ornamental plants (D/16 + D/17) (in ha)
Number of holdings with forage plants (D/18)
Forage plants (D/18) (in ha)
Number of holdings with permanent pasture and meadows (F)
permanent pasture and meadows (F) (in ha)

Number of holdings with permanent crops (G)
Permanent crops (G) (in ha)
Number of holdings with vineyards (G/04)
Vineyards (G/04) (in ha)
Number of holdings with woodland (H/02)
Woodland (H/02) (in ha)
Total number of holdings with livestock (J/01-J/19)
Number of holdings with bovine animals (J/02-J/08)
Bovine animals (J/02-J/08). number
Number of holdings with bovine animals under 1 year old (J/02)
Bovine animals under 1 year old (J/02). number
Number of holdings with bovine animals 1 year or over but under 2 years. male (J/03)
Bovine animals 1 year or over but under 2 years. male (J/03). number
Number of holdings with bovine animals 1 year or over but under 2 years. female (J/04)
Bovine animals 1 year or over but under 2 years. female (J/04). number
Number of holdings with bovine animals 2 year old and over. male (J/05)
Bovine animals 2 year old and over. male (J/05). number
Number of holdings with bovine animals 2 year old and over. heifers (J/06)
Bovine animals 2 year old and over. heifers (J/06)
Number of holdings with dairy cows (J/07)
Dairy cows (J/07). number
Number of holdings with other cows (J/08)
Other cows (J/08). number
Number of holdings with sheep (J/09)
Sheep (J/09). number
Number of holdings with goats (J/10)
Goats (J/10). number
Number of holdings with pigs (J/11-J/13)
Pigs (J/11-J/13). number
Number of holdings with poultry (J/14-J/16)
Poultry (J/14-J/16). number
Total labour force (L/01-L/06) in AWU
Labour force excluding non-family labour force employed on a non-regular basis (L/01-L/04) (persons)
Labour force excluding non-family labour force employed on a non-regular basis (L/01-L/04). in AWU
Total family labour force (L/01-L/03) (person)
Total family labour force (L/01-L/03) in AWU
Total family labour force full-time employed (L/01-L/03) (person)
Holder's being a natural person (persons)
Holder's being a natural person (AWU)
Holder's being a natural person: age < 35 years (persons)
Holder's being a natural person: age < 35 years (AWU)

Holder's being a natural person: age 35 to 44 years (persons)
Holder's being a natural person: age 35 to 44 years (AWU)
Holder's being a natural person: age 45 to 54 years (persons)
Holder's being a natural person: age 45 to 54 years (AWU)
Holder's being a natural person: age 55 to 64 years (persons)
Holder's being a natural person: age 55 to 64 years (AWU)
Holder's being a natural person: age 65 years and over (persons)
Holder's being a natural person: age 65 years and over (AWU)
Holder's being a natural person: sex = male (persons)
Holder's being a natural person: sex = female (persons)
Holder's being a natural person: work time > 0 to < 25% (persons)
Holder's being a natural person: work time > 0 to < 25% (AWU)
Holder's being a natural person: work time > 25 to < 50% (persons)
Holder's being a natural person: work time > 25 to < 50% (AWU)
Holder's being a natural person: work time > 50 to < 75% (persons)
Holder's being a natural person: work time > 50 to < 75% (AWU)
Holder's being a natural person: work time > 75 to < 100% (persons)
Holder's being a natural person: work time > 75 to < 100% (AWU)
Holder's being a natural person: work time 100% (persons)
Holder's being a natural person: work time 100% (AWU)
Number of holdings with: Specialist field crops
Number of holdings with: Specialist horticulture
Number of holdings with: Specialist permanent crops
Number of holdings with: Specialist grazing livestock
Number of holdings with: Specialist granivores
Number of holdings with: Mixed cropping
Number of holdings with: Mixed livestock holdings
Number of holdings with: Mixed crops - livestock
Total AA of holdings with: Specialist field crops
Total AA of holdings with: Specialist horticulture
Total AA of holdings with: Specialist permanent crops
Total AA of holdings with: Specialist grazing livestock
Total AA of holdings with: Specialist granivores
Total AA of holdings with: Mixed cropping
Total AA of holdings with: Mixed livestock holdings
Total AA of holdings with: Mixed crops - livestock

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