Comparing Sectoral Investment and Employment Specialisation of EU Regions: A Spatial Econometric Analysis

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Abstract: This study analyses relative sectoral investment and employment patterns in EU regions. In the econometric analysis, we control for heteroscedasticity, spatial autocorrelation and potential endogeneity. We find that relative specialisation in manufacturing sectors is higher in central regions. Relative specialisation in services sectors, instead, is stronger in administrative centres as well as peripheral regions. A higher local level of sectoral economies of scale and of productivity strongly increases relative investments in manufacturing sectors. Lower (higher) regional labour costs attract, in particular, higher relative employment shares in labour-intensive (human capital-intensive) sectors.

I Motivation

Since the inauguration of the EMU, market integration and factor mobility – especially of the production factor capital – are ensured. The EMU-wide optimal allocation of production might thus increase sectoral concentration and regional specialisation. One the one hand, this will help regions to profit from specialisation gains. One the other hand, those regions showing a rather heterogeneous or unfortunate industrial structure could find themselves confronted with the risk of unsmoothable sectoral shocks.

Up to date, there is no clear indication concerning specialisation tendencies to be expected in the integrated EU market. A number of important studies analysing concentration and specialisation patterns has been conducted in recent times. However, they mostly focus on employment or production data, not paying attention to the mobility of capital which is enforced by EMU and financial market integration. In addition, a profound analysis of regional, not only national, specialisation is still missing in most recent studies.

This analysis aims to identify the determinants of sectoral specialisation patterns of EU regions with respect to gross fixed capital formation in addition to employment. It thus will give insights into the determinants that cause a region to have especially strong investments or employment in specific sectors. Patterns of fortunate or unfortunate regional specialisation will thus be detected. This is important since econometric analyses (Stirboeck, 2002a, 2002b) demonstrate that the location of a region in either the adminstrative centre or in the periphery increases the uneven relative allocation of investments across sectors within the region.[1] Since administrative centres show a better performance in economic terms than peripheral regions, we thus expect different qualities of specialisation of both kinds of regional entities.

The (potentially unfortunate) patterns of sectoral specialisation of peripheral regions are of high importance since the significant positive impact of market integration on regional specialisation (Kalemli-Ozcan, Sorensen and Yosha, 1999; Stirboeck, 2002a) might further aggravate existing tendencies. In addition, the comparison of investment and employment specialisation will highlight differences in the allocation of a more and a less mobile factor of production.

Though, our focus is not on the explanation of the spatial concentration of industries (i.e. the heterogeneity of the allocation of economic activity across space) or the localisation of sectors in countries or regions, some insights from earlier studies on these topics are important to mention as well. Scale-intensive industries seem to underlie stronger concentration tendencies than other industries according to the descriptive analysis of the localisation patterns of employment across EU countries of Brülhart and Torstensson (1996) as well as Brülhart (1998). In addition, these industries are predominantly located in central EU countries. The process of

[1] The level of regional investment specialisation is also augmented by a region's small size, weak market potential, high regional population density or unemployment rate and by increasing economic openness or capital account liberalisation.

concentration seems to be already more advanced in the high-technological and scale-intensive sectors than in labour-intensive and science-based sectors - the latter two now showing stronger tendencies of specialisation.

The level of spatial concentration of sectoral production across EU countries is investigated by Amiti (1999) and Haaland et al. (1999), the one across Spanish regions by Paluzie, Pons and Tirado (2001). These studies have identified a higher level of demand concentration, human capital, stronger scale intensity and intermediate-input intensity of a sector to increase its level of concentration while a high labour intensity seems to decrease the sector's uneven allocation across space.[2] Amiti (1999) additionally finds significant positive time effects and concludes that reductions in trade barriers have possible increasing impacts on sectoral concentration. Middlefart-Knarvik et al. (2001) focus on the determinants of the location of sectors analysing gross value added. Sectors which are intensive in unskilled labour are located in peripheral, low wage countries while those industries highly dependent on intermediate inputs and subject to increasing returns to scale are significantly stronger attracted by central regions. In addition, all industries prefer to locate in big regions, i.e. close to large markets.

In the following, we present our econometric analyses on the determinants of strong or weak relative sectoral investments and employment patterns, i.e. what sort of EU regions are particularly specialised in specific sectors. This is intended to give insight into regional characteristics that influence the allocation of economic activity across sectors within a region and thus regional specialisation patterns.

Section II explains the construction of the sectoral indices of relative regional specialisation and summarises the differing theoretical explanations of sectoral specialisation. Section III presents the econometric analyses of the determinants of relative investment specialisation of EU regions. A comparison of the specialisation patterns of investments in contrast to employment is finally given in Section IV. Conclusions are summarised in Section V.

II Data and Indicators

We analyse EU regions at the NUTS 2-level for the period 1985 to 1994. The definition of NUTS-regions is based on political or administrative criteria, and not on economic criteria. The analysis of NUTS-regions might therefore not give us the actual degree of specialisation of economic entities. However, data on economic or functional regions is not available in official databases. Defining economic regions is arbitrary and depends on the variable or sector regarded, i.e. a general specification of regional disaggregation is inappropriate. The analysis of administrative entities, instead, allows us to focus on the degree of specialisation of a territorial community which is authorised to implement regional policies or is in the focus of regional structural programmes.[3]

[2] The finding of Haaland et al. (1999) of a significant negative impact of economies of scale on sectoral concentration for 1992, one of the two years analysed, however, is a controversial outcome.

[3] Since the 1961 Brussels Conference on Regional Economies, regional policies are generally applicated in NUTS 2-regions (Eurostat, 1999).

The maximum number of regions with sufficient sectoral investment data is 45. These regions belong to France (22) and Italy (20). In addition, the three mono-regional countries Luxembourg, Denmark and Ireland (being also defined as NUTS 2-regions) are included. Up to 17 differentiated sectors (see Table 1) – consistent to Eurostat's industrial classification NACE 1970 (Nomenclature des activités économiques dans les Communautés Européennes) are available in the REGIO database. These refer to agriculture, manufactured products as well as market and non-market services.

Analysing the sectoral specialisation patterns of the 45 regions, we focus on the regional investment and employment shares in relation to an economy of reference. Thus, relative specialisation of gross fixed capital formation in relation to EU patterns (SPCFEU) as well as relative specialisation of employment in relation to EU patterns (SPEMEU) is measured. This relative perspective is important as the absolute allocation of production across sectors does not give any information about a region's particularly high level of sectoral engagement.[4]

Table 1: Sectors disaggregated according to NACE 1970

Sector	Abbr.
Agricultural, forestry and fishery products	AGRO
Manufactured products	
Fuel and power products	FUEL
Ferrous and non-ferrous ores and metals, other than radioactive	META
Non-metallic minerals and mineral products	MINE
Chemical products	CHEM
Metal products, machinery, equipment, electrical goods	METP
Transport equipment	TREQ
Food, beverages, tobacco	FOOD
Textiles and clothing, leather and footwear	TEXT
Paper and printing products	PAPE
Products of various industries	VARI
Building and construction	BUIL
Services	
Recovery, repair, trade, lodging and catering services	TRLO
Transport and communication services	TRCO
Services of credit and insurance institutions	CRED
Other market services	OTHS
Non-market services	NMSE

In order to measure relative investment indices, we refer to adapted Balassa-indices[5] which reflect the relative investment performance and the relative employment performance of a

[4] While measures of absolute allocation are influenced by the sectoral classification, measures of relative allocation are influenced by the sectoral patterns of either the economy of reference or the average pattern of the group of countries included. In case of a very special pattern of the reference economy, the relative specialisation pattern of the economic entities analysed can be biased. See e.g. Stirboeck (2001) or Krieger-Boden (1999).

[5] This kind of specialisation index has first been introduced by Balassa for the analysis of the relative export "performance" of a country by use of export data and is known as the "revealed comparative advantage" index in international trade theory [see e.g. Balassa (1989:19)].

region. The sectoral investment (I) share of the respective region s_{ij}^{I} is calculated in relation to the average sectoral share of EU value added $\boldsymbol{r_i}$ [6]:

$$SPCFEU_{ij} = \frac{s_{ij}^{I}}{r_i} = (I_{ij} / \sum_i I_{ij}) / (\sum_j x_{ij} / \sum_i \sum_j x_{ij})$$

with i (j) as the sectoral (regional) index. If the region's investment in one sector is relatively strong (low) compared to the average sectoral share of value added in EU, the index is higher (smaller) than 1.[7]

Relative employment shares have been constructed in a similar way measuring the sectoral employment (L) share of the respective region s_{ij}^{L} in relation to the average sectoral share of EU value added $\boldsymbol{r_i}$:

$$SPEMEU_{ij} = \frac{s_{ij}^{L}}{r_i} = (L_{ij} / \sum_i L_{ij}) / (\sum_j x_{ij} / \sum_i \sum_j x_{ij}) \ .$$

The investigation of *regional indices of sectoral specialisation* does not give insights into the level of *sectoral concentration* across space. Relative sectoral investment (employment) shares simply tell in which regions investments (employment) in a sector are particularly strong or weak. A spatial agglomeration of the sector is only evident in case of high Balassa-indices in only one or few nearby regions.

III Theoretical Background: the specification

In order to explain relative specialisation in the different sectors, a number of important theoretical determinants can thus be identified as explained above within the traditional trade theory as well as regional economics such as polarisation theories and the NEG. Following these different theoretical approaches, comparative advantages such as factor cost or productivity differentials, the location of the region, economies of scale, and the regional market size are to be taken into consideration when explaining the regional patterns of sectoral specialisation. In addition, we pay attention to economic openness in order to capture potential impacts of market integration within EU.

In *traditional trade theory*, productivity and factor cost differentials between regions are important for the explanation of comparative advantages. Sectoral value added in relation to sectoral employment captures the level of regional productivity in the different sectors. We

[6] As sectoral GFCF and employment data are not in all cases as complete as we wish it to be, we had to use adequate, but different, data representing the economic extent or importance of the different sectors to calculate sectoral specialisation indices with respect to GFCF. Therefore we refer to data of gross value added at factor costs as the denominator when calculating the specialisation indices in relation to EU average patterns. By this, we apply the same denominator for both specialisation patterns and increase their comparability.

[7] In some few (four) cases, negative investments were replaced by zero investments in order to avoid problems in the interpretation and calculation of further indicators. Such negative investments are mostly due to realignments and depreciation and are always close to zero investments.

thus use the (annual) deviation of the regional productivity in a sector from the mean of all regions (DPROD) in the estimates. The regional compensation of employees per employee reflects average regional labour costs in the sector. Again, we measure particularly high or low regional levels of labour costs by the (annual) deviation from the mean (DLABCOST). A positive deviation of regional labour costs in a sector from the mean should lead to decreasing investments or employment in this sector according to the theory if labour costs are important. A negative sign of DLABCOST thus explains specialisation which is in line with comparative advantages. In addition, a significant negative sign of DLABCOST provides evidence for the importance of labour costs as a factor of dispersion in a particular sector and a potentially inverse U-shaped curve of sectoral concentration.

The location of a region varies between two extremes: the core and the periphery. The core is measured by an indicator variable capturing those regions which are administrative centres of each country. These can be regarded as a proxy for the economic centres (CENTR).[8] In addition, the regional population density (PODEN) is another indicator of economically important regions – both variables PODEN and CENTR can be included jointly since their correlation only amounts to about 0,45. Finally, the location in the periphery is measured by the distance to the economic centre (DIST) of the respective country. A positive sign of CENTR and PODEN as well as a negative sign of DIST in the estimates for the important growth-oriented sectors would support the hypothesis of the *polarisation theory* of cumulative agglomeration tendencies in the centre and backwash effects for peripheral regions.

The significant importance of the market size in the explanation of the location of sector would provide evidence in favour of the *New Economic Geography* which predicts that scale-intensive sectors concentrate production close to large markets. Therefore, the size of the regional market is approximated by gross regional product (GRP). The regional level of economies of scale (ES) in a sector is measured by dividing sectoral value added at factor costs by the number of firms in the given sector.[9] The significance of the regional level of ES indicates the further agglomeration potential of the respective sector.

In order to measure the impact of market integration (INT), we use an indicator of economic openness by Quinn (1997).[10] We expect an increasing impact on the level of regional speciali-

[8] In some countries like Germany, the administrative centre would not adequately represent the economic centre. However, in the countries analysed, the administrative centre is a good proxy.

[9] Data availability limits us to this simple measure of economies of scale. A more complex proxy of ES is the average value of shipments per firm, considering the 50% largest firms, assuming that the larger firms are likely the efficient size to exploit economies of scale (Saunders, 1982; Caves, 1974). The average value added per firm, we use, is a common proxy in empirical studies as well and according to Lall/Siddharthan (1982)'s correlation analysis a sufficient proxy.

[10] Quinn (1997) has constructed such a yearly index of openness on the basis of those restrictions published by the IMF since the 1950s. This index is scaled from 0 (highest degree of restrictions) up to 14 (highest degree of liberalisation) and aggregates the different indicators of liberalisation progress in seven specified fields (capital in – and outflows, im– and exports of goods and of services as well as international conventions of liberalisation) with a respective degree of liberalisation between 0.5 and 2. Quinn weighs quantitative restrictions of imports for example the highest (i.e. he attributes the lowest partial liberalisation index of 0 in case of full and 0.5 in case of partly quantitative restrictions), existence of laws requiring the approval of international transactions are scored 1, taxes 1.5 and finally free trade 2. With regard to capital account liberalisation, Quinn attributes 0 in case of required approval for capital transactions which are rarely granted, 0.5

sation according to both, the traditional trade theory and the NEG. However, adding this variable in the analysis of sectoral specialisation indices might tell us which sectors do profit particularly from increasing economic openness.

In addition, we include further regional characteristics and economic performance variables in the specification which can be assumed to be important in the explanation of investment or employment decisions. These regional control variables are the regional size (AREA) and the unemployment rate (UEWP). We also include indicator variables for the different countries (DUM_FRA, DUM_LUX etc.) as further control variables capturing country-specific impacts.

We thus test the following specification for each sector:

$$SPCF(EM)EU_{ij} = \beta_0 + \beta_1 COMP_{ij} + \beta_2 CENTR_j + \beta_3 PODEN_j + \beta_4 DIST_j + \beta_5 GRP_j + \beta_6 ES_{ij} + \beta_7 QUINN\_OPENN_j + \beta_8 AREA_j + \beta_9 UEWP_j + country\ dummies + \varepsilon_{ij}$$

with i (j) as the sectoral (regional) index. Since we apply a pooled regression, we omitted the time index in the above specification. Depending on the data availability, regressions are run for up to 45 regions and up to ten years (1985 to 1994).

The number of firms in the different sectors as well as the compensation of employees are not available for all regions and years. Thus, our dataset is restricted when including the variables DPROD, ES and DLABOST in the analysis. In addition, when including the region-specific level of sectoral economies of scale as well as of the productivity differential, the analysis only focuses on nine manufacturing sectors with available sector-specific data. Thus, theoretically very important variables can only be included in additional estimates with less observations. Separate estimates are therefore displayed for the analysis of DLABCOST in sections IV.1a and IV.2a as well as of both sector-specific explanatory variables in section IV.2b.

(1) in case of occasional (frequent) approval and finally 1.5 in case of taxing measurements (without the need of an official approval) and 2 in case of full liberalisation. Detailed restrictions for Luxembourg are not available. Since Luxembourg and Belgium are part of a common monetary union since the 1950s, the „Quinn-indicator“ for Luxembourg is therefore naturally set equal to the one of Belgium.

IV Sectoral specialisation: Comparing the patterns of investment and employment specialisation

IV.I Region-specific determinants of investment specialisation patterns

a) Specialisation patterns

To avoid problems of heteroscedasticity such as inefficient standard errors, we make use of generalised least squares (GLS)[11] estimates. The qualitative results are given in Table 2 (for detailed results see Table A-3 in the appendix).[12] Statistical significance has to be at least 10%, though it reaches the 1%-level in most cases. Additional instrumental-variable (IV)-estimates are given in Table A-4. These control for potential endogeneity between the level of specialisation and regional GRP as well as UEWP. Following a common approach in econometric analysis, lagged values of the unemployment rate as well as of GRP are included as instruments. Results are very similar to those of the GLS estimates.

Investments in many manufacturing sectors are attracted by large markets (proxied by GRP). However, relative investment shares in credit & insurance services, other services, transport & communication as well as trade & lodging services are lower in larger markets. Investments in market services thus seem to be strengthened in smaller markets, in contrast to investments in manufacturing industries. Relative investments in e.g. agriculture as well as the food industry, paper & printing products, the textiles industries, and the metal industries are significantly lower in the administrative centre (CENTR) of the respective country. We thus can assume that labour-intensive producing sectors prefer to locate outside the administrative centres. In addition, investments in chemical products, various industries, transport equipment as well as mineral products are significantly lower in the administrative centres. Market services, instead, have higher relative investment shares in the administrative centre as well as in densely-populated regions (PODEN).

Significantly lower relative investments are to be found in larger regions (AREA) in agriculture, metal production (META), non-market services as well as transport equipment, while the inverse is evident for fuel & power products, metal products & electrical goods (METP) as well as the services sectors CRED, TRCO, and TRLO. The location far away from the centre (DIST), i.e. in the periphery, leads to significantly lower relative investments in agriculture and most manufacturing sectors, but to stronger relative specialisation in the market services sectors (besides CRED), non-market services as well as building & construction. Results for the level of the regional unemployment rate (UEWP) as well as for regions being located in countries with a higher economic openness (INT) do not provide clear patterns with

[11] We thus estimate variance-corrected standard errors to prevent that potential heteroscedasticity influences the coefficients‘ significance.

[12] In the case of Denmark, data availability is very poor since, continuously, we only have specialisation indices for four sectors. In addition, information on Irish investments in TRLO and OTHS is not available.

respect to the nature of sectoral investment strength. We thus have no evidence that increasing European integration might influence investments in particular sectors.

Summarising, we find market services sectors to have a significantly stronger relative gross fixed capital formation in small markets, central regions, regions with high population density as well as peripheral regions. Manufacturing sectors are mainly located outside the national administrative centres, however, not too far away from those. Investments in manufacturing sectors are, thus, stronger in the central parts of each country, but not in the administrative centre itself. Non-market services investment shares are higher in the peripheral and small regions as well as in regions with high unemployment and a low population density. Relative investments in agriculture, finally, are located neither in the centre nor the periphery, and are stronger in smaller, not densely populated regions, but also in large markets.

Table 2: Influence of regional characteristics on sectoral investment patterns

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
CENTR	-	+	-	-	-	-	-	-	-	-	-	+	+	+	+	+	
PODEN	-	-	-	-				-	-			-	+	+	+	+	-
DIST	-			-	-	-	-	-	-	-	-	+	+	+		+	+
GRP	+		+	+	+	+		+	+			+	-	-	-	-	
QUINN_OPENN		+					+	+				-		+	-	-	
AREA	-	+	-			+	-				+		+	+	+		-
UEWP	+	+			+	-		-	-	-	-	+	-	-	-	+	+
DUM_FRA	-	-	+	-				+	-	+		-	-	-	+	+	+
DUM_IRE	+	-	+		+	+		+	+			-	n.v.	-	+	n.v.	
DUM_LUX	-	-	+			+			+		+	-		-	+	-	+
DUM_DEN	-	-	n.v.	n.v.	n.v.	n.v.	n.v.	n.v.	n.v.	n.v.	n.v.		n.v.	n.v.	n.v.	n.v.	+
no. of obs.	377	377	353	361	360	361	353	361	360	361	361	377	358	363	363	358	377

Note: Results are displayed in case of statistical significance only. Detailed results are given in the appendix in Table A-3.

Due to the possible influence of the average regional labour cost in attracting particular sectors, we also included the average, and not sectoral, regional labour cost differential $LABCOST_j$ [13] in the estimates to capture low-wage and high-wage regions. Table 3 presents the results of these additional regressions. Now, according to traditional trade theory, a lower level of regional labour costs than in the other regions should increase production in those sectors highly dependent on labour costs. Thus, this effect should be reflected in higher investments in labour-intensive sectors in those regions with lower labour costs. A high percentage of high-qualified labour in a region increases the average level of regional labour costs. Human-capital intensive production is expected to locate in regions with abundance of high-qualified labour, thus probably "high-cost" regions.

Table 3: Additional influence of the regional level of average labour costs, GFCF

	AGRO	META	MINE	CHEM	FOOD	VARI	BUIL	TRCO	CRED	OTHS
DLABCOST	-	+	+	+	-	-	-	+	+	-

Note: Results are displayed in case of significance only. Detailed results are given in the appendix in Table A-5

[13] Since the variable compensation of employees is not available for the French regions, the number of observations in the regressions is drastically reduced. We thus do not conduct additional IV-estimates.

And actually, investment shares in the traditional, labour-intensive sectors AGRO, FOOD, BUIL and VARI[14] turn out to be significantly lower in regions with higher average labour costs.[15] The more capital or human capital intensive sectors „metal products, machinery, equipment, electrical goods", chemical industries, credit & insurance services and transport & communication services, instead, consistently show significantly investment shares in those regions with a high level of local labour costs. However, this also applies to the sector „non-metallic minerals & mineral products".

b) Controlling for spatial correlation and interaction in the analysis of investment specialisation patterns

In order to check for the robustness of the above presented results of traditional econometric procedures, we now refer to spatial econometric tools in our investigation of investment specialisation.[16] Since we deal with regional data and analyse the process of regional specialisation, we cannot exclude potential correlations or interactions between regional developments. Some specific regional specialisation might not be independent from the one of the neighbouring region. Spatial econometric approaches[17] explicitly model and control for spatial autocorrelation or interdependence to avoid inefficient or inconsistent parameter estimates or specification errors.

In a first step, we refer to test diagnostics testing for potential spatial correlation in the residuals of simple OLS regressions. Unfortunately, in quite a number of cases, we cannot assume a significant normal distribution of the error terms. As a consequence, the test diagnostics on spatial autocorrelation should only be interpreted as an indication of the potentially underlying structure of spatial correlation, but not as reliable as in case of normally distributed residuals.

The Moran I test simply tests for the existence of any spatial correlation, the Lagrange Multiplier (LM) error and LM lag tests examine the significance of a specific kind of spatial structure. We conduct these tests on the basis of an inverse distance matrix. The choice of an inverse distance matrix to capture the spatial weights is determined by the assumption that the interregional influence on sectoral specialisation should be decreasing with increasing distance. In order to build regional distance matrices, we use the coordinates of the administrative centres of the respective regions since we can assume them to be equivalent to economic centres in most cases.

[14] Included activities like manufacture of wood & wood products, manufacture of articles of jewellery, photographic & cinematographic laboratories can be categorised as labour-intensive.

[15] However, it is not possible to give an exact interpretation of the result for the sector „other services" due to the broad range of included activities.

[16] Since the number of observations is largely decreased in the estimates including the regional level of average labour costs, we restrict our sensitivity analyses to the specification without this variable.

[17] For detailed descriptions of spatial econometric tools, see e.g. Baltagi (2002), Anselin (1988) and Anselin/Florax (2003).

Table 4: Regression diagnostics for spatial autocorrelation of investment specialisation (Regional characteristics)

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT
Moran I	4.270 ***	-8.170 ***	-14.199 ***	10.282 ***	1.677 *	-17.373 ***	1.236	-13.249 ***	-8.452 ***
LM error test	3.958 **	31.828 ***	89.893 ***	33.774 ***	0.167	133.292 ***	0.013	80.232 ***	35.342 ***
LM lag test	17.298 ***	5.833 **	48.013 ***	53.896 ***	0.655	20.319 ***	0.043	6.762 ***	11.914 ***
	PAPE	**VARI**	**BUIL**	**TRLO**	**TRCO**	**CRED**	**OTHS**	**NMSE**	
Moran I	-3.217 ***	1.794 *	4.117 ***	10.137 ***	-1.214	6.412 ***	10.504 ***	-11.598 ***	
LM error test	7.079 ***	0.234	3.595 *	32.710 ***	1.964	11.403 ***	35.401 ***	56.981 ***	
LM lag test	1.207	6.340 **	16.434 ***	62.445 ***	6.442 **	6.653 ***	12.929 ***	6.316 **	

Table 4 presents the results of all three tests for the analysis of the determinants of sectoral investment specialisation for each of the 17 sectors. We can see that in many cases a significant structure of spatial correlation is present. The significance is not (consistently) demonstrable in the case of TREQ, CHEM as well as TRCO and only very weak for VARI. The sectoral specialisation of the regions analysed seems to underlie a positive spatial correlation in some sectors (AGRO, MINE, VARI, BUIL, TRLO, CRED, OTHS) and a negative one in other sectors (FUEL, META, METP, FOOD, TEXT, PAPE, NMSE).

Paying attention to the specific kind of spatial correlation, it is mixed as well. For most sectors, the Lagrange Multiplier tests for spatial structure are significant for both, a spatial error model and a spatial lag model. Since both LM tests are sensitive against the alternative form of spatial structure, we refer to the higher value of the LM test in order to get an indication of the better specification according to Anselin (1992).[18] For nine sectors, the LM tests provide evidence of the spatial error model being the better specification. And only two services sectors (CRED and OTHS) show positive spatial autocorrelation of the error terms while the other seven sectors show a negative one.

For five sectors (being AGRO, MINE, VARI, BUIL, and TRLO) the tests show a higher value for the LM lag test. For all of these sectors, the tests consistently point to a positive spatial lag dependence. In economic terms, this would imply that the sectoral specialisation of a region in one of these sectors positively influences the specialisation of the neighbouring regions in the same sector.

Table A-6 in the appendix compares the results of the OLS estimates with those of the ML estimates of the spatial error and the spatial lag model for each sector. In those cases with higher LM error test values, the spatial error model is generally confirmed to be the best model either according to the insignificant spatial lag parameter or to the lower AIC value.

In those cases with higher LM lag test values, the results of the ML estimates are differing. Like predicted by the OLS test diagnostics on spatial autocorrelation, the spatial lag model shows a positive spatial dependence for the sectoral specialisation in MINE and TRLO. We also find a weak, positive spatial lag dependence for VARI. However, the AIC points to a

[18] The more specific „robust LM tests“ which are robust against the alternative form of spatial structure do not provide further evidence, so we do not include their results here.

superiority of the spatial error model formulation for the two sectors AGRO and BUIL which show a positive spatial correlation structure.

The spatial parameters are insignificant – like we would expect according to the OLS test diagnostics – in the estimates for CHEM (the spatial lag parameter is only significant on the 10%-level of significance while the specification is not confirmed by the LM lag test) and TREQ. The spatial error model is highly significant for TRCO, though, quite a number of coefficients included in the specification are not significant any more. Since this is the only case with evident changes in the significant variables, this rather points to a mis-specification of the spatial error model.

Summarising, there is no significant, consistent spatial autocorrelation when analysing CHEM, TREQ and TRCO. But, we can detect a positive spatial lag dependence for TRLO, MINE and VARI. However, for most other sectors, the regional specialisation underlies a spatial error autocorrelation which is negative in six cases, but positive in the other five cases. Besides the three sectors named above, we thus mostly find no spatial interdependence between the sectoral specialisation of neighbouring regions. The underlying spatial error autocorrelation instead points to potential data problems or to inadequate regional definitions what is underlined by the changing sign of the spatial autocorrelation structure.

Checking the sensitivity of the results of traditional OLS estimates, there is no general problem of significance concerning the non-spatial autocorrelation parameters. The other coefficients identified in IV.I.a are usually significant as well without changing their signs. Thus, the specialisation patterns discussed above are robust even when controlling for spatial autocorrelation effects.

IV.II Comparing investment and employment specialisation patterns

a) Patterns of employment specialisation

The regional characteristics influencing the patterns of employment specialisation reflect to a large extent those of investment specialisation. Table 5 presents the results of the GLS-estimates for the sectoral employment patterns (detailed results are presented in the appendix in Table A-7). IV-estimates provide the same results and are given in the appendix in Table A-8.[19] Again, the manufacturing sectors mostly show higher employment shares in regions with large markets (with the exception of AGRO, MINE and BUIL), though not in the administrative centres (besides BUIL). We also find significantly lower shares in regions with high unemployment rates (not accounting for AGRO, FUEL, BUIL) and in peripheral regions (besides FUEL and BUIL). These general patterns are congruent with those of investment specialisation and do again never apply to the sector building & construction.

Employment specialisation in the services sectors is again stronger in the administrative centres and in peripheral regions. Like for investment specialisation, though less strong, we find

[19] Since we do not detect problems of robustness in the spatial estimates for sectoral investment specialisation patterns, we only refer to classical estimates in the analysis of employment specialisation in the following.

differences concerning the specialisation in services between the administrative centres and the peripheral regions. Only administrative centres show significantly higher Balassa-indices in credit and insurance services – in employment like in investment specialisation. In contrast to the results presented above, peripheral regions now additionally show high relative employment shares in transport & communication services, administrative centres in non-market services. TRCO, CRED, and OTHS show significantly higher employment shares in those regions with a high market potential – in contrast to investment shares which are lower. In addition, some minor differences are evident for employment in agriculture as well as transport & communication services.[20]

Table 5: Influence of regional characteristics on sectoral employment patterns

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
CENTR			-	-	-	-	-	-	-	-	-	+		+	+	+	+
PODEN	-	-	-	-		+	+		+	+		-		-	+		-
DIST	-	+		-	-	-	-	-	-	-	-	+	+	+		+	+
GRP	-			-	+	+	+		+	+		-	-	+	+	+	-
QUINN_OPENN	+			+		-				-		+	-			-	+
AREA	+	-	-			+	-		+		+	-	-	-	+		
UEWP	+	+	-	-		-		-	-	-	-	+	-	-	-	-	+
DUM_FRA	-	+	+	-	+	+	+	+	-	+			-		+	+	
DUM_IRE		+	+		+	+	+	+		+					+	-	-
DUM_LUX	-		+			+		+				+		-	+		-
DUM_DEN	-		+			+		+		+		+	-		+	-	+
DUM_BEL	-	+	+	-	+			+	-	+	-		-		+	+	+
no. of obs.	494	425	413	418	413	416	417	418	418	418	416	425	416	416	416	418	425

Note: Results are displayed in case of significance only. Detailed results are given in the appendix in Table A-7.

Also, clear country-specific effects are obvious: relative employment specialisation is always significantly stronger in at least three other countries than in Italy in the sectors CRED, META, CHEM, METP, FOOD as well as PAPE. In the sectors AGRO and TRLO, employment shares are significantly higher in Italy. This is mostly consistent with the more incomplete data for investment shares. However, we find significantly higher investment shares in FUEL and TRCO in Italy than in the other countries. This is not the case for employment shares which are even significantly lower in FUEL.

Table 6: Additional influence of the regional level of average labour costs, Employment

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
DLABCOST	-	+	+		+	+	+	-	-		-	-		+	+	+	+

Note: Results are displayed in case of significance only. Detailed results are given in the appendix in Table A-9.

The influence of the regional level of labour costs on employment specialisation is given in Table 6. For most sectors, we find specialisation indices which are significant and consistent with traditional trade theory. Specialisation in the labour-intensive sectors AGRO, FOOD, TEXT, BUIL and VARI increases with a lower level of regional labour costs than in the other regions (i.e. than on average). It increases in the rather (human) capital-intensive sectors CHEM, METP, TREQ, TRCO and CRED (but also in FUEL, META, OTHS and NMSE) in

[20] Regions with a higher market potential (large area) show a lower (higher) employment specialisation in agriculture whereas investment specialisation was stronger (lower). With respect to transport & communication services, employment specialisation is – also opposed to investment specialisation – higher in regions with a higher market potential and lower in small and not densely populated regions.

those regions with a high-wage level. This higher wage level is generally interpreted as strong indication of a higher level of education.

b) Checking for the influence of further, sector-specific variables

As described above, the regional deviation from the average level of productivity (DPROD) in the different sectors as well as the regional level of sectoral economies scale (ES) are important determinants in the analysis of sectoral specialisation of regions. Both variables are added in separate estimates[21], in the analysis of investment as well as of employment specialisation. Results are displayed in Table 7. Detailed results, including IV-estimates (by use of lagged values of GRP, UEWP, DPROD, and ES), are displayed in the appendix in Tables A-10 to A-13. As explained above, we only have the necessary data for nine manufacturing sectors, and not of all the 17 sectors. In addition, the data availability and thus the number of observations differs in each case. Again, the influence of the explanatory variables, we have already discussed above, is mostly robust in spite of the decreased number of observations.

Table 7: Additional influence of sector-specific regional characteristics

		FUEL	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	BUIL
GFCF	ES	+	+	+	+	+	+	+	+	
EMP	ES	+	+	+	+	+	+		+	-
GFCF	DPROD	+	+	+		+	+		+	-
EMP	DPROD	-	+	+	+	-	+			-

Note: Results are displayed in case of significance only. Detailed results are given in the appendix in Tables A-10 to A-13.

The results do provide evidence of mostly significant impacts of the sector-specific regional level of productivity and the level of economies of scale. With respect to investment specialisation, those regions with higher economies of scale[22] as well as a higher productivity in the different sectors attract a higher relative share of gross fixed capital formation. These impacts, however, cannot be found for building & construction. In addition, the regional level of sectoral productivity seems to be of no importance in textiles as well as metal & electrical products.

The influence of regional sector-specific economies of scale is also consistently positive in the analysis of employment specialisation (besides for building & construction). This means that manufacturing employment shares are generally higher in those regions with higher sectoral ES. Mostly positive as well, but not as consistent as for investment specialisation, are the coefficients' signs for the regional productivity differentials. While the coefficients were either positive or insignificant (besides for BUIL) with respect to investment specialisation, they are now significantly negative for BUIL as well as for FUEL and TREQ. Only in four of the nine manufacturing sectors, we find the positive sign expected according to the traditional trade theory.

[21] Both variables are included jointly in one regression for each sector. The results do not change much. The number of observations, however, is still further decreased.

[22] This result is consistent with Amiti (1999) who found significant positive effects of economies of scale on sectoral concentration in addition to the intermediate goods intensity.

When conducting additional IV-estimates, most results can be confirmed.[23] Stronger sector-specific economies of scale in a region consistently attract higher relative employment and investment shares – except for building & construction as well as, with respect to employment shares, textiles. In addition, productivity differentials play a significant role in attracting higher relative investment shares – in line with traditional trade theory.

V Conclusion

In this paper, we investigate the driving forces of relative sectoral investment and employment shares and thus the relative specialisation of EU regions in specific sectors. The econometric analyses aim at identifying the regional determinants of high relative sectoral shares. We test a number of determinants from different theoretical approaches and control for heteroscedasticity, potential endogeneity and spatial autocorrelation.

Country-specific dummies are mostly significant. This means that country-specific characteristics which are not captured by the regional determinants in our estimates do influence the sectoral specialisation of regions in most sectors. These country-specific effects differ with respect to each sector concerning investment specialisation, but clear country-specific effects are evident for employment patterns. Italy shows significantly lower employment shares in a number of manufacturing sectors and higher ones in the labour-intensive sectors AGRO and TRLO than the other countries.

Regional factor cost or productivity differentials are supposed to matter according to the traditional trade theory. Sectoral productivity differentials between regions generally (mostly) contribute to the explanation of relative investment (employment) shares in those nine manufacturing sectors analysed. Striking is the consistent significance of low (high) regional labour cost levels in explaining high employment shares in labour-intensive (human capital-intensive) sectors. This is less evident for the explanation of investment shares. However, in many sectors, productivity differentials and average regional labour cost differentials thus contribute to the explanation of specialisation patterns in accordance with traditional trade theory. Productivity differentials do so, especially with respect to the explanation of investment patterns, regional labour cost differentials with respect to the explanation of employment patterns.

A high market potential (proxied by GRP) significantly attracts higher investment and employment shares in many manufacturing sectors. The location close to large markets does seems to be important for manufacturing production as predicted by the New Economic Geography. The consistently significant and positive sign of the regional level of sector-specific economies of scale additionally points to a further agglomeration potential in these sectors. However, market integration, which according to the New Economic Geography is supposed

[23] In some few case, the respective region-specific sectoral variable or one of the other explanatory variables looses significance. However, to some extent this can be explained by the lower number of variables included.

to enforce the agglomerative forces of economies of scale, is only significant in the explanation of the regional specialisation in few sectors and no consistent patterns are detectable.

Relative investment and employment shares in most manufacturing sectors are higher in those regions close to (and not far away from) the administrative centre (though not in the administrative centres themselves). In addition, core regions and densely-populated regions show a significantly stronger relative specialisation in the important and growth-oriented services sectors. But we cannot directly conclude on cumulative agglomeration of services in the core since peripheral regions show higher relative sectoral shares in some services sectors as well.

This aspect is particularly important since empirical studies (e.g. Stirboeck, 2002a; Molle. 1997) provide evidence for the stronger regional specialisation of core as well as of peripheral regions. While core regions are marked by a high potential of economic performance, peripheral regions mostly are not. Poor and unfortunate specialisation patterns would does justify political fears about unwanted core-periphery structures. Indeed, the econometric analyses demonstrate that peripheral regions compared to core regions play a different role in the location of sectoral investments and employment. This is particularly striking for investments. The driving forces of sectoral specialisation are favourable for core regions with respect to growth-oriented market services like credit & insurance services. The services sectors with the highest regional investment specialisation of peripheral regions, instead, are repair, trade & lodging services as well as other services – both linked to economic activity in tourism.

This apparently negative picture of sectoral specialisation of peripheral regions is complemented by additionally stronger relative investments in non-market services as well as building & construction. As long as investments in NMSE and BUIL support education or infrastructure measures, a high relative regional specialisation can be beneficial. However, in general, high relative investments in NMSE as well as BUIL do not necessarily represent a specific advantage, but rather a high dependence on non-market economic activities and a poor sectoral diversification.

When regarding “absolute” regional investment shares, i.e. regional investment shares not given in relation to EU, these only amount to about 2.5% (3%) of total investments in France (Italy) in BUIL and to about 15% (8.5%) in France (Italy) in NMSE. Thus, the respective importance of those sectors, peripheral regions are more strongly specialised in than regions in the central parts of a country, is not too high. However, to be precise, the extent of sectoral investment shares in NMSE largely varies between 5.3% for Lazio and 27.5 % for Valle d’Aosta. This shows that differences between central and some of the peripheral regions are rather large. In addition, those regions with the highest relative investments shares are clustered in Southern Italy with respect to the sector BUIL, and are located in the French regions far away from the French capital, e.g. in Southern France, with respect to NMSE.

All these findings are rather bad signs for the economic development of peripheral regions. But we also found that, though, those regions far away from the economic centre mostly show a lower relative specialisation in manufacturing sectors, a particularly low level of regional labour cost seems to contribute to the extension of investments and especially employment in labour-intensive sectors. These patterns do provide hope for the periphery to be capable to attract (labour-intensive) manufacturing production by low labour cost levels. Some NEG

models predict an inverse U-shaped form of sectoral concentration, once transaction costs are sufficiently low. However, the capacity of low-wage and poor performing countries to attract low growth (labour-intensive) sectors might be an advantage, but need not necessarily improve their economic situation to a large extent.

A good sign is the stronger relative importance of some of the services sectors – in addition to NMSE and BUIL – in the regions far away from the centre. Though, there are large differences with respect to the sector's importance across space. These are the most obvious for transport & communication services. Its investment share is only about 6 to 9% in Southern Italian regions while it amounts to 24% in Lazio. However, for repair, trade & lodging services as well as other services, the variation of regional investment shares is much less pronounced. While it would be a waste of resources to promote or even subsidise the location of manufacturing sectors in peripheral regions if these sectors are already established in other regions profiting from increasing returns to scale at sector level. But the strengthening of services sectors compatible with regional economic conditions which are preferably subject to low fix or sunk costs seems to be a promising strategy for some peripheral regions.

Since we only rarely detect significant spatial interdependence between the level of sectoral specialisation of neighbouring regions, we need not fear additional negative spill-overs or regional interactions of unfortunate specialisation patterns. The spatial clustering of similar sectoral specialisation in some unfortunate sectors in the peripheral regions is not generally accompanied by significant spatial interdependencies. The only exceptions are the sectors MINE, VARI, and TRLO. The regional specialisation in one of these three sectors is significantly positively influenced by the one of neighbouring regions. A look at the geographic allocation of regions specialised in these sectors shows that the highest specialisation in MINE is obvious for those regions in the central parts of Italy and in TRLO for the traditional tourist and coastal Italian regions and the isle of Corse. No clear patterns are obvious for those regions particularly specialised in VARI.

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Appendix

Data description

All data included in the analysis are based on the European System of Accounting established for data since 1979 (ESA79). Data are taken from the Eurostat REGIO Database (yearbooks up to 2000) which – for gross fixed capital formation - comprises data for the years 1985 to 1994. Sectoral wages and salaries as well as local units of entreprises are available in the Structural Business Statistic (SBS) of Eurostat.

Table A-1: List of explanatory variables, REGIO and SBS Database

abbreviation	variable	unit
GFCF	Gross Fixed Capital Formation	Currency: Billions of ECU
TOTEM	Total Employment	in 1000 persons
COE	Compensation of employees	Currency: Billions of ECU
VAFC	Gross value added at factor costs	Currency: Billions of ECU
GDP	Gross domestic product	Currency: Billions of ECU
PAT	European R&D patent applications	total number
UEWP	Total Unemployment rates	in % OF WORKING POPULATION
POP	Total annual average population	in Mio. PERSONS
PODEN	Population density	in 1000 INHABITANTS/KM2
WAGSAL	Wages and Salaries	Currency: Billions of ECU
UNITENT	Local units of entreprises	total number

In addition to the available national account data, a number of further variables has been used in the econometric analysis. The distance to the centre (**DIST**) captures peripheral effects. It is measured by the optimal route distance between the regional capital and the centre of the respective country. Centres are Paris, Rome, London and Brussels. The distance is defined to be 1 for Denmark, Luxembourg as well as Ireland, and it is equally 1 for the regions containing the capital of the respective country. These economically most important regions (**CENTR**) in the analysis are Île de France (France), Brussels (Belgium), and Lazio (Italy).

Table A-2: List of further explanatory variables

abbreviation	variable	unit
DIST	Distance to centre, index of peripherality	1000 km
CENTR	Regional dummy set for central region	0 or 1
QUINN_OPENN	Indicator of openness per country	0-14 (variation by 0.5)
RDINT	Reasearch intensity	PAT/GDP
LABCOST	Regional labour cost per unit in sector i	$WAGSAL_i/TOTEM_i$
PROD	Regional productivity in sector i	$VAFC_i/TOTEM_i$
ES	Regional level of economies of scale in sector i	$VAFC_i/UNITENT_i$

Estimation Results

Table A-3: GLS-Estimates of the Determinants of Sectoral Specialisation, GFCF, Regional Characteristics

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
Constant	3.6645	-0.3870	3.5323	1.9030	0.3975	0.8764	0.3562	0.8488	1.5497	1.2906	1.8888	0.7304	0.7538	-0.0152	0.3518	2.6416	0.4809
	9.19	-0.94	2.78	5.41	1.83	6.76	0.60	3.93	4.62	3.94	4.90	12.20	6.49	-0.06	5.94	16.89	3.45
CENTR	-0.7152	0.6094	-1.3718	-0.8509	-0.5506	-0.7050	-0.5671	-0.8720	-1.7857	-0.4652	-1.2109	0.0874	0.1351	1.6121	0.0857	0.2696	0.1205
	-3.13	2.59	-1.91	-4.38	-4.59	-9.85	-1.74	-7.32	-9.62	-2.57	-5.70	2.55	2.11	11.05	2.62	3.12	1.51
PODEN	-6.8820	-1.3280	-4.3186	-1.3549	-0.4305	-0.0103	-0.9823	-1.0061	-0.9594	0.0826	-0.3548	-0.4181	0.5347	2.6983	0.4755	1.3921	-0.5275
	-9.77	-1.83	-1.96	-2.25	-1.16	-0.05	-0.97	-2.72	-1.66	0.15	-0.54	-3.95	2.68	5.95	4.68	5.19	-2.14
DIST	-1.0713	0.1735	-0.7398	-0.7202	-0.3286	-0.3770	-0.8404	-0.8967	-0.6950	-0.6214	-0.6639	0.0540	0.2104	0.4607	0.0163	0.2565	0.4727
	-6.89	1.08	-1.24	-5.44	-3.94	-7.73	-3.73	-11.04	-5.39	-5.04	-4.58	2.31	4.81	4.63	0.73	4.36	8.68
GRP	0.0124	0.0014	0.0135	0.0035	0.0045	0.0031	0.0039	0.0029	0.0106	0.0011	0.0019	0.0009	-0.0018	-0.0113	-0.0009	-0.0020	-0.0008
	5.15	0.58	1.81	1.71	3.53	4.00	1.13	2.26	5.38	0.56	0.85	2.57	-2.71	-7.24	-2.49	-2.14	-0.89
QUINN_OPENN	-0.0141	0.0959	-0.0700	0.0029	0.0087	-0.0001	0.0814	0.0385	-0.0206	-0.0054	0.0071	-0.0278	-0.0113	0.1057	-0.0082	-0.0983	0.0100
	-0.49	3.22	-0.75	0.11	0.55	-0.01	1.87	2.44	-0.84	-0.23	0.25	-6.38	-1.33	5.47	-1.90	-8.60	0.99
AREA	-0.0213	0.0120	-0.0587	0.0003	-0.0024	0.0034	-0.0153	-0.0031	0.0030	-0.0024	0.0093	-0.0009	0.0054	0.0161	0.0043	0.0006	-0.0078
	-3.77	2.06	-3.14	0.06	-0.81	1.91	-1.87	-1.04	0.64	-0.53	1.75	-1.12	3.39	4.44	5.28	0.28	-3.95
UEWP	0.0660	0.0973	-0.0116	-0.0098	0.0104	-0.0346	0.0038	-0.0119	-0.0151	-0.0384	-0.0657	0.0097	-0.0251	-0.0258	-0.0101	0.0202	0.0081
	6.73	9.64	-0.38	-1.17	2.01	-11.16	0.27	-2.30	-1.88	-4.90	-7.14	6.62	-9.05	-4.09	-7.15	5.40	2.37
DUM_FRA	-1.3308	-0.7341	0.4700	-0.7401	-0.0173	-0.0135	0.1876	0.2881	-0.7965	0.1771	-0.1144	-0.0658	-0.0490	-0.3410	0.0752	0.1531	0.5026
	-15.51	-8.31	1.64	-10.12	-0.38	-0.50	1.54	6.42	-11.34	2.60	-1.43	-5.11	-2.03	-6.21	6.10	4.71	16.74
DUM_IRE	0.8755	-2.3674	2.9846	0.1481	0.8922	0.7598	0.4253	2.0546	0.7526	0.6465	0.5525	-0.2444	--	-1.2490	0.4803	--	0.1992
	2.02	-5.31	1.79	0.33	3.18	4.53	0.56	7.36	1.73	1.52	1.11	-3.76		-4.13	7.08		1.32
DUM_DEN	-1.0486	-0.6364	--	--	--	--	--	--	--	--	--	-0.0652	--	--	--	--	0.4732
	-3.03	-1.78										-1.25					3.90
DUM_LUX	-1.1348	-0.7172	3.3211	0.1656	0.2371	0.2296	-0.4839	0.2160	1.9503	-0.3970	1.6401	-0.1424	-0.1114	-1.6229	2.4484	-0.8406	0.5754
	-3.36	-2.06	2.81	0.50	1.17	1.89	-0.88	1.07	6.22	-1.30	4.55	-2.81	-1.03	-6.57	44.20	-5.75	4.87
no. of obs.	377	377	353	361	360	361	353	361	360	361	361	377	358	363	363	358	377
Prob Chi²	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the z-values of the GLS estimates. The probability of the Chi²-test gives the joint significance of all coefficients.

Table A-4: Instrumental-Variable Estimates of the Determinants of Sectoral Specialisation, GFCF, Regional Characteristics

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
Constant	3.6739	-0.1711	3.4874	1.9587	0.3971	0.9532	0.6484	0.9002	1.4278	1.4045	2.1656	0.6980	0.7816	0.0431	0.3716	2.4671	0.4384
	8.46	-0.39	2.48	5.11	1.67	6.86	0.99	3.82	4.02	3.89	5.16	11.45	6.38	0.15	5.73	15.42	2.91
CENTR	-0.6511	0.5167	-1.4332	-0.8326	-0.5880	-0.7249	-0.5460	-0.8950	-1.7849	-0.4938	-1.2266	0.0802	0.1537	1.6616	0.0737	0.2704	0.1318
	-2.65	2.06	-1.84	-4.00	-4.53	-9.61	-1.55	-7.00	-9.23	-2.52	-5.38	2.33	2.31	10.79	2.10	3.11	1.55
PODEN	-7.0183	-1.4313	-4.7721	-1.1848	-0.5673	0.0246	-0.7460	-1.1475	-0.9967	0.1631	-0.2085	-0.5717	0.6716	2.5998	0.4710	1.2927	-0.4648
	-8.93	-1.78	-1.92	-1.77	-1.36	0.10	-0.66	-2.78	-1.60	0.26	-0.28	-5.19	3.13	5.24	4.15	4.62	-1.70
DIST	-1.0838	0.1437	-0.8158	-0.6856	-0.3489	-0.3812	-0.8489	-0.9049	-0.6391	-0.6369	-0.6705	0.0464	0.2325	0.4571	0.0166	0.2603	0.4743
	-6.61	0.86	-1.28	-4.94	-3.95	-7.57	-3.55	-10.61	-4.86	-4.87	-4.41	2.02	5.24	4.45	0.71	4.49	8.34
GRP (IV)	0.0127	0.0022	0.0151	0.0030	0.0050	0.0029	0.0027	0.0034	0.0107	0.0008	0.0013	0.0014	-0.0023	-0.0111	-0.0008	-0.0016	-0.0010
	4.75	0.81	1.80	1.31	3.50	3.43	0.71	2.40	5.04	0.39	0.52	3.79	-3.14	-6.52	-2.13	-1.66	-1.08
QUINN_OPENN	-0.0151	0.0729	-0.0626	-0.0056	0.0087	-0.0039	0.0703	0.0351	-0.0163	-0.0119	-0.0086	-0.0248	-0.0142	0.0993	-0.0105	-0.0835	0.0119
	-0.48	2.28	-0.61	-0.20	0.50	-0.39	1.48	2.05	-0.63	-0.45	-0.28	-5.64	-1.60	4.82	-2.24	-7.19	1.10
AREA	-0.0224	0.0115	-0.0624	0.0008	-0.0041	0.0032	-0.0147	-0.0044	0.0015	-0.0026	0.0097	-0.0019	0.0062	0.0167	0.0041	0.0002	-0.0070
	-3.66	1.83	-3.03	0.16	-1.24	1.69	-1.65	-1.38	0.30	-0.54	1.70	-2.17	3.69	4.33	4.70	0.08	-3.28
UEWP (IV)	0.0695	0.1088	-0.0072	-0.0067	0.0143	-0.0362	-0.0092	-0.0095	-0.0088	-0.0399	-0.0716	0.0111	-0.0265	-0.0230	-0.0087	0.0177	0.0083
	6.10	9.36	-0.20	-0.69	2.36	-10.27	-0.55	-1.60	-0.97	-4.35	-6.73	6.95	-8.52	-3.20	-5.30	4.35	2.11
DUM_FRA	-1.3266	-0.7835	0.5049	-0.7570	-0.0060	-0.0195	0.1565	0.2898	-0.7702	0.1671	-0.1509	-0.0545	-0.0578	-0.3639	0.0717	0.1868	0.5006
	-14.42	-8.34	1.62	-9.67	-0.12	-0.69	1.19	6.03	-10.55	2.27	-1.76	-4.22	-2.31	-6.28	5.42	5.72	15.68
DUM_IRE	0.8344	-2.3878	3.1735	0.0768	0.9697	0.7892	0.4361	2.1101	0.8240	0.6771	0.5389	-0.2061	--	-1.3786	0.4841	--	0.1515
	1.82	-5.10	1.79	0.16	3.27	4.57	0.54	7.21	1.86	1.51	1.03	-3.21		-4.40	6.76		0.95
DUM_DEN	-1.0998	-0.5916	--	--	--	--	--	--	--	--	--	-0.0661	--	--	--	--	0.4592
	-3.02	-1.59										-1.30					3.64
DUM_LUX	-1.1839	-0.5811	3.4016	0.1542	0.2879	0.2135	-0.6776	0.2398	2.0208	-0.4186	1.5437	-0.1203	-0.1422	-1.6567	2.4634	-0.8086	0.5737
	-3.31	-1.59	2.70	0.45	1.34	1.70	-1.15	1.13	6.30	-1.28	4.07	-2.40	-1.29	-6.47	42.12	-5.60	4.62
no. of obs.	358	358	334	342	341	342	334	342	341	342	342	358	339	344	344	339	358
Prob F	0.000	0.000	0.001	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the t-values of the IV estimates. The probability of the F-test gives the joint significance of all coefficients.

Table A-5: GLS and IV Estimates of the Determinants of Sectoral Specialisation (GFCF), including DLABCOST

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
Constant	3.7583	-0.6995	2.0478	1.4416	0.2970	0.6693	0.4074	0.8276	1.3116	1.0348	1.5048	0.7842	0.5027	0.1344	0.2411	2.6988	0.9624
	10.41	-1.49	3.27	3.25	1.78	4.51	0.51	3.95	2.98	4.01	3.87	10.30	3.21	0.44	4.13	15.33	5.62
DLABCOST	-0.1889	0.0679	0.3739	0.1132	0.1745	-0.0046	-0.0530	-0.0385	-0.0465	0.0213	-0.1420	-0.0157	0.0292	0.1865	0.0205	-0.0949	-0.0044
	-5.94	1.64	5.40	2.31	9.47	-0.28	-0.61	-1.66	-0.96	0.75	-3.31	-2.34	1.68	5.65	3.23	-4.88	-0.29
CENTR	-0.8749	0.2898	-2.4904	-1.8624	-0.9354	-0.5563	-0.5246	-0.6242	-1.7400	-0.3262	-0.5419	0.1477	-0.0092	1.3010	-0.0444	0.5405	0.1038
	-3.73	0.95	-5.72	-6.04	-8.06	-5.40	-0.95	-4.29	-5.68	-1.82	-2.01	2.99	-0.08	6.21	-1.10	4.42	0.93
PODEN	-7.3569	-2.2395	-4.0860	-1.9842	-0.9604	0.5316	-1.3002	-0.9606	-0.9652	0.3959	1.3657	-0.3851	0.7597	2.9652	0.4557	1.3288	-0.9309
	-11.53	-2.69	-3.62	-2.49	-3.19	1.99	-0.91	-2.55	-1.22	0.85	1.95	-2.86	2.69	5.44	4.34	4.19	-3.08
DIST	-0.0011	0.0001	-0.0009	-0.0020	-0.0005	-0.0003	-0.0010	-0.0008	-0.0013	-0.0007	-0.0001	0.0001	0.0001	0.0003	-0.0001	0.0004	0.0006
	-5.68	0.52	-2.65	-8.20	-5.47	-3.35	-2.13	-7.11	-5.40	-4.56	-0.32	1.99	0.61	1.81	-3.52	3.54	6.80
GRP	0.0121	-0.0058	0.0015	-0.0053	0.0008	0.0032	0.0074	0.0033	0.0095	-0.0008	0.0028	0.0024	-0.0049	-0.0121	-0.0012	0.0011	0.0022
	4.94	-1.80	0.36	-1.77	0.71	3.15	1.38	2.31	3.16	-0.48	1.08	4.57	-4.62	-5.90	-2.91	0.96	1.91
QUINN_OPENN	-0.0260	0.1431	0.0276	0.0782	0.0227	-0.0023	0.0686	0.0255	-0.0099	-0.0040	-0.0169	-0.0331	0.0133	0.1070	0.0048	-0.1036	-0.0174
	-1.01	4.25	0.60	2.41	1.86	-0.21	1.18	1.67	-0.31	-0.21	-0.60	-6.07	1.16	4.83	1.13	-8.05	-1.42
AREA	-0.0014	0.0306	-0.0107	0.0513	0.0102	0.0096	-0.0160	0.0094	0.0427	0.0207	0.0206	-0.0071	0.0174	0.0026	0.0061	-0.0106	-0.0309
	-0.17	2.73	-0.72	4.90	2.58	2.74	-0.81	1.91	4.10	3.40	2.25	-3.95	4.71	0.37	4.40	-2.55	-7.59
UEWP	0.0448	0.0932	0.0201	-0.0166	0.0273	-0.0359	0.0116	-0.0208	-0.0329	-0.0450	-0.0863	0.0116	-0.0310	-0.0052	-0.0086	0.0163	0.0160
	4.64	7.42	1.12	-1.31	5.71	-8.47	0.52	-3.48	-2.61	-6.10	-7.77	5.72	-6.92	-0.60	-5.18	3.25	3.50
DUM_IRE	0.0456	-3.2722	0.7908	-2.4042	0.1036	0.4024	0.3185	1.2473	-1.5893	-0.7259	0.0318	0.0602	--	-0.4638	0.4468	--	1.4760
	0.09	-4.85	0.82	-3.54	0.40	1.77	0.25	3.89	-2.35	-1.84	0.05	0.55		-1.06	5.28		6.01
DUM_DEN	-0.1881	-1.0003	--	--	--	--	--	--	--	--	--	0.0972	--	--	--	--	1.0741
	-0.57	-2.34										1.41					6.91
DUM_LUX	0.6616	-0.9909	2.2220	0.1022	-0.5634	0.2497	-0.0775	0.3649	2.2830	-0.5156	2.3246	-0.0994	-0.2074	-2.7669	2.4078	-0.4504	0.5371
	1.97	-2.26	3.83	0.25	-3.65	1.82	-0.11	1.88	5.60	-2.16	6.47	-1.40	-1.43	-9.89	44.66	-2.77	3.37
no. of obs.	219	219	206	207	207	207	199	207	207	207	207	219	204	209	209	204	219
Prob Chi²	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0716	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Lines below coefficients report the z-values of the GLS estimates. The probability of the Chi²-test gives the joint significance of all coefficients.

Table A-6: Spatial Econometric Analysis (Spatial Lag and Spatial Error Model) of Investment Specialisation Patterns

	AGRO			FUEL			META			MINE			CHEM		
OLS/Spatial Lag/Error	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**
W_SPCFEU		0.428 ***			-0.503 **			-1.369 ***			0.678 ***			0.110	
CONSTANT	3.664 ***	2.958 ***	4.514 ***	-0.387	0.204	-0.868 **	3.532 ***	5.644 ***	5.582 ***	1.903 ***	0.937 **	1.641 ***	0.398 *	0.334	0.352
CENTR	-0.715 ***	-0.851 ***	-0.725 ***	0.609 ***	0.779 ***	1.417 ***	-1.372 *	-1.809 ***	-2.130 ***	-0.851 ***	-1.032 ***	-1.003 ***	-0.551 ***	-0.544 ***	-0.479 ***
PODEN	-6.882 ***	-7.526 ***	-7.366 ***	-1.328 *	-1.323 *	-0.372	-4.319 **	-4.477 **	-11.191 ***	-1.355 **	-1.525 ***	-1.344 ***	-0.430	-0.450	-0.554
DIST	-1.071 ***	-1.101 ***	-0.537 ***	0.174	0.260	0.447 ***	-0.740	-1.121 **	-0.939 **	-0.720 ***	-0.742 ***	-0.649 ***	-0.329 ***	-0.331 ***	-0.388 ***
GRP	0.012 ***	0.015 ***	0.015 ***	0.001	0.001	0.001	0.014 *	0.016 **	0.039 ***	0.004 *	0.005 **	0.004 **	0.005 ***	0.004 ***	0.004 ***
QUINN_OPEN	-0.014	-0.024	-0.030	0.096 ***	0.099 ***	0.096 ***	-0.070	-0.086	-0.167 **	0.003	0.000	0.002	0.009	0.009	0.012
AREA	-0.021 ***	-0.024 ***	-0.021 ***	0.012 **	0.011 *	0.015 ***	-0.059 ***	-0.074 ***	-0.126 ***	0.000	-0.001	-0.004	-0.002	-0.002	0.000
UEWP	0.066 ***	0.053 ***	0.011	0.097 ***	0.117 ***	0.105 ***	-0.012	-0.029	0.031	-0.010	-0.001	-0.002	0.010 **	0.011 **	0.016 ***
DUM_FRA	-1.331 ***	-0.975 ***	-1.294 ***	-0.734 ***	-0.926 ***	-0.695 ***	0.470	0.955 ***	0.828 ***	-0.740 ***	-0.393 ***	-0.469 ***	-0.017	-0.026	-0.081
DUM_IRE	0.876 **	1.455 ***	1.370 ***	-2.367 ***	-2.736 ***	-3.076 ***	2.985 *	5.138 ***	7.185 ***	0.148	0.625	0.708	0.892 ***	0.847 ***	0.592 **
DUM_DEN	-1.049 ***	-0.804 **	-1.039 ***	-0.636 *	-0.831 **	-1.222 ***	--			--			--		
DUM_LUX	-1.135 ***	-0.633 *	-0.854 **	-0.717 **	-0.853 **	-0.615 **	3.321 ***	3.996 ***	3.512 ***	0.166	0.764 **	0.628 *	0.237	0.233	0.145
LAMBDA			0.929 ***			-1.749 ***			-1.875 ***			0.799 ***			0.434 *
Breusch-Pagan test		62.55 ***	53.01 ***		53.63 ***	77.74 ***		363.81 ***	341.16 ***		106.76 ***	115.55 ***		109.36 ***	115.66 ***
LR-test		12.44 ***	17.63 ***		6.41 **	53.25 ***		37.33 ***	72.31 ***		22.34 ***	18.12 ***		0.33	0.79
LM-Error/Lag test		14.46 ***	25.09 ***		19.65 ***	2.43		0.83	29.16 ***		24.11 ***	6.55 **		1.99	36.11 ***
AIC	2.118	2.090	2.071	2.176	2.165	2.035	4.351	4.251	4.147	1.790	1.734	1.740	0.824	0.828	0.822
no. of obs.	377			377			353			361			360		

	TREQ			FOOD			TEXT			PAPE			VARI		
OLS/Spatial Lag/Error	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**
W_SPCFEU		-0.032			-0.261			-0.388 *			-0.180			0.363 *	
CONSTANT	0.356	0.376	0.365	0.849 ***	1.063 ***	0.915 ***	1.550 ***	2.022 ***	1.778 ***	1.291 ***	1.448 ***	1.334 ***	1.889 ***	1.366 ***	1.869 ***
CENTR	-0.567 *	-0.567 *	-0.565 *	-0.872 ***	-0.883 ***	-1.164 ***	-1.786 ***	-1.702 ***	-1.451 ***	-0.465 **	-0.435 **	-0.174	-1.211 ***	-1.222 ***	-1.207 ***
PODEN	-0.982	-0.960	-1.011	-1.006 ***	-0.899 **	-0.724 *	-0.959 *	-0.771	-0.597	0.083	0.117	0.227	-0.355	-0.546	-0.371
DIST	-0.840 ***	-0.849 ***	-0.838 ***	-0.897 ***	-0.948 ***	-1.033 ***	-0.695 ***	-0.608 ***	-0.644 ***	-0.621 ***	-0.646 ***	-0.598 ***	-0.664 ***	-0.689 ***	-0.666 ***
GRP	0.004	0.004	0.004	0.003 **	0.003 **	0.002 *	0.011 ***	0.010 ***	0.007 ***	0.001	0.001	0.000	0.002	0.003	0.002
QUINN_OPEN	0.081 *	0.081 *	0.081 *	0.039 **	0.039 **	0.039 ***	-0.021	-0.018	-0.010	-0.005	-0.005	-0.001	0.007	0.006	0.007
AREA	-0.015 *	-0.015 *	-0.015 *	-0.003	-0.003	-0.003	0.003	0.002	0.000	-0.002	-0.002	-0.002	0.009 *	0.009	0.009 *
UEWP	0.004	0.004	0.003	-0.012 **	-0.014 ***	-0.016 ***	-0.015 *	-0.028 ***	-0.041 ***	-0.038 ***	-0.042 ***	-0.049 ***	-0.066 ***	-0.051 ***	-0.063 ***
DUM_FRA	0.188	0.188	0.187	0.288 ***	0.341 ***	0.289 ***	-0.797 ***	-0.951 ***	-0.804 ***	0.177 ***	0.202 ***	0.191 ***	-0.114	-0.154 *	-0.118
DUM_IRE	0.425	0.419	0.432	2.055 ***	2.132 ***	2.378 ***	0.753 *	0.730 *	0.804 **	0.647	0.663	0.459	0.552	0.451	0.536
DUM_DEN	--			--			--			--			--		
DUM_LUX	-0.484	-0.474	-0.499	0.216	0.238	0.227	1.950 ***	1.617 ***	1.676 ***	-0.397	-0.410	-0.580 **	1.640 ***	1.740 ***	1.668 ***
LAMBDA			0.024			-1.162 ***			-1.437 ***			-0.821 **			0.115
Breusch-Pagan test		112.08 ***	111.13 ***		78.75 ***	76.59 ***		96.11 ***	133.82 ***		226.94 ***	218.75 ***		57.98 ***	57.04 ***
LR-test		0.02	0.01		2.99 *	35.25 ***		6.29 **	33.86 ***		0.74	7.48 ***		4.30 **	0.18
LM-Error/Lag test		1.40	1.40		40.15 ***	151.14 ***		0.18	111.97 ***		4.89 **	46.64 ***		19.34 ***	6.07 **
AIC	2.814	2.820	2.814	0.814	0.811	0.716	1.697	1.685	1.603	1.651	1.654	1.630	1.973	1.967	1.973
no. of obs.	353			361			360			361			361		

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	TRLO			TRCO			CRED			OTHS			NMSE		
OLS/Spatial Lag/Error	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**	**OLS**	**Lag**	**Error**
W_SPCFEU		0.866 ***			-0.449 **			-0.097 ***			0.691 ***			-0.254	
CONSTANT	0.754 ***	0.156	0.644 ***	-0.015	0.830 *	0.681 ***	0.352 ***	0.392 ***	0.338 ***	2.642 ***	1.381 ***	3.368 ***	0.481 ***	0.628 ***	0.470 ***
CENTR	0.135 **	0.205 ***	0.239 ***	1.612 ***	1.529 ***	1.556 ***	0.086 ***	0.077 **	0.086 ***	0.270 ***	0.214 **	0.035	0.120	0.102	-0.005
PODEN	0.535 ***	0.556 ***	0.512 ***	2.698 ***	2.299 ***	0.464	0.476 ***	0.473 ***	0.447 ***	1.392 ***	1.583 ***	1.404 ***	-0.528 ***	-0.533 **	-1.019 ***
DIST	0.210 ***	0.163 ***	0.160 ***	0.461 ***	0.513 ***	0.698 ***	0.016	0.009	-0.002	0.257 ***	0.332 ***	0.400 ***	0.473 ***	0.480 ***	0.462 ***
GRP	-0.002 ***	-0.002 ***	-0.002 ***	-0.011 ***	-0.010 ***	-0.001	-0.001 **	-0.001 **	-0.001 **	-0.002 **	-0.002 **	-0.001	-0.001	-0.001	0.001
QUINN_OPEN	-0.011	-0.008	-0.007	0.106 ***	0.099 ***	0.068 ***	-0.008 *	-0.008 *	-0.009 **	-0.098 ***	-0.100 ***	-0.107 ***	0.010	0.010	0.005
AREA	0.005 ***	0.005 ***	0.005 ***	0.016 ***	0.013 ***	-0.003	0.004 ***	0.004 ***	0.003 ***	0.001	0.000	0.000	-0.008 ***	-0.007 ***	-0.006 ***
UEWP	-0.025 ***	-0.014 ***	-0.011 ***	-0.026 ***	-0.029 ***	-0.029 ***	-0.010 ***	-0.011 ***	-0.008 ***	0.020 ***	0.008 **	-0.006	0.008 ***	0.009 ***	0.015 ***
DUM_FRA	-0.049 **	-0.035	-0.029	-0.341 ***	-0.453 ***	-0.275 ***	0.075 ***	0.090 ***	0.104 ***	0.153 ***	0.128 ***	0.250 ***	0.503 ***	0.568 ***	0.486 ***
DUM_IRE	--			-1.249 ***	-1.131 ***	-0.300	0.480 ***	0.501 ***	0.528 ***	--			0.199	0.212	0.086
DUM_DEN	--			--			--			--			0.473 ***	0.497 ***	0.384 ***
DUM_LUX	-0.111	-0.057	-0.040	-1.623 ***	-1.711 ***	-1.555 ***	2.448 ***	2.449 ***	2.547 ***	-0.841 ***	-0.957 ***	-0.776 ***	0.575 ***	0.681 ***	0.570 ***
LAMBDA			0.954 ***			-1.934 ***			0.836 ***			0.979 ***			-1.454 ***
Breusch-Pagan test		179.82 ***	186.18 ***		91.89 ***	143.35 ***		241.02 ***	263.41 ***		32.09 ***	28.76 ***		136.53 ***	113.24 ***
LR-test		36.34 ***	33.29 ***		5.57 **	42.41 ***		7.02 ***	12.58 ***		15.71 ***	63.83 ***		3.50 *	47.61 ***
LM-Error/Lag test		22.56 ***	1.46		3.03 *	34.71 ***		8.28 ***	2.60		35.49 ***	1.57		15.24 ***	138.98 ***
AIC	-0.430	-0.526	-0.523	1.219	1.209	1.102	-1.771	-1.785	-1.806	0.165	0.127	-0.013	0.018	0.014	-0.108
no. of obs.	358			363			363			358			377		

Table A-7: GLS-Estimates of the Determinants of Sectoral Specialisation, EMPLOYMENT, Regional Characteristics

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
Constant	1.7445	0.0977	1.0502	1.3214	0.2791	1.0617	0.8583	0.9179	3.9873	0.8778	3.0609	0.5809	1.6616	0.8439	0.2187	0.6672	0.7753
	3.64	1.17	3.49	5.10	2.66	9.03	3.43	8.94	6.48	9.74	8.11	5.48	22.33	9.48	6.96	15.24	9.94
CENTR	-0.1033	0.0534	-0.5747	-0.4497	-0.2499	-0.8500	-0.5995	-0.5322	-3.9784	-0.1834	-1.3249	0.1323	0.0656	0.3468	0.2345	0.3032	0.7806
	-0.30	0.92	-2.75	-2.54	-3.42	-10.64	-3.53	-7.59	-9.46	-2.98	-5.16	1.79	1.30	5.73	10.97	10.14	14.36
PODEN	-0.2524	-0.0361	-0.0904	-0.1041	-0.0098	0.1026	0.0718	0.0115	0.5340	0.0442	0.0462	-0.1280	-0.0053	-0.0360	0.2499	0.0002	-0.0849
	-2.78	-2.43	-1.71	-2.30	-0.53	5.02	1.65	0.64	4.97	2.81	0.70	-6.78	-0.41	-2.33	45.75	0.03	-6.11
DIST	-0.0005	0.0001	0.0002	-0.0005	-0.0002	-0.0004	-0.0004	-0.0005	-0.0028	-0.0004	-0.0006	0.0005	0.0003	0.0002	0.0000	0.0001	0.0002
	-2.04	2.96	1.20	-3.88	-3.07	-7.27	-3.49	-9.52	-9.02	-9.39	-3.35	9.37	8.33	4.28	1.43	6.57	6.34
GRP	-0.0172	0.0004	0.0017	-0.0022	0.0029	0.0055	0.0036	-0.0002	0.0127	0.0035	0.0019	-0.0011	-0.0005	0.0009	0.0010	0.0011	-0.0030
	-10.44	1.34	1.57	-2.35	7.63	12.98	4.03	-0.42	5.66	10.60	1.40	-2.74	-1.92	2.86	8.51	6.92	-10.46
QUINN_OPENN	0.1126	0.0028	-0.0116	0.0325	0.0037	-0.0187	-0.0097	0.0010	0.0098	-0.0151	-0.0307	0.0204	-0.0145	0.0038	-0.0001	-0.0088	0.0214
	3.24	0.46	-0.53	1.72	0.49	-2.18	-0.53	0.14	0.22	-2.30	-1.11	2.65	-2.68	0.58	-0.02	-2.76	3.77
AREA	0.0120	-0.0027	-0.0195	0.0010	-0.0007	0.0034	-0.0092	0.0020	0.0199	0.0010	0.0186	-0.0066	-0.0025	-0.0047	0.0016	0.0002	0.0005
	1.88	-2.16	-4.22	0.27	-0.46	2.01	-2.56	1.37	2.24	0.73	3.42	-4.21	-2.33	-3.68	3.46	0.35	0.39
UEWP	0.1647	0.0086	-0.0156	-0.0113	-0.0003	-0.0281	-0.0049	-0.0166	-0.1189	-0.0245	-0.1004	0.0393	-0.0112	-0.0069	-0.0058	-0.0033	0.0200
	13.04	4.09	-2.11	-1.76	-0.11	-9.73	-0.80	-6.56	-7.82	-10.98	-10.82	14.74	-6.14	-3.16	-7.51	-3.01	10.18
DUM_FRA	-1.3849	0.1229	0.1943	-0.4059	0.0704	0.1854	0.5744	0.4424	-1.3845	0.2199	-0.1361	0.0317	-0.2950	0.0272	0.1550	0.2523	0.0330
	-10.73	4.90	2.04	-5.31	2.11	5.36	7.81	14.58	-7.61	8.26	-1.23	0.99	-13.47	1.04	16.75	19.50	1.41
DUM_IRE	-0.8691	0.2429	1.3959	0.2508	0.2891	0.7625	0.6502	1.0817	1.2014	0.4188	0.2782	0.0678	0.0554	-0.0779	0.1479	-0.6027	-0.4135
	-1.38	2.15	3.26	0.69	1.93	4.51	1.87	7.55	1.40	3.33	0.51	0.47	0.52	-0.61	3.27	-9.87	-3.92
DUM_DEN	-1.2737	0.0187	0.5481	-0.3241	0.0477	0.5167	0.3459	0.8135	-0.6124	0.2947	0.1396	0.2393	-0.3570	-0.0593	0.1815	-0.3698	0.3340
	-2.56	0.23	1.75	-1.21	0.44	4.28	1.35	7.68	-0.96	3.17	0.36	2.27	-4.67	-0.65	5.62	-8.18	4.30
DUM_LUX	-2.0909	-0.0036	4.8394	0.2919	0.0606	0.6020	-0.0564	0.3154	0.1469	0.0176	0.6914	0.6307	-0.1131	-0.2302	1.0886	-0.0345	-0.9033
	-4.22	-0.04	14.86	1.04	0.53	4.47	-0.20	2.82	0.22	0.18	1.60	6.00	-1.33	-2.26	30.24	-0.72	-11.67
DUM_BEL	-2.9501	0.1282	0.3929	-0.4308	0.1988	-0.0543	-0.0190	0.1561	-2.0213	0.1557	-0.3468	0.0415	-0.1252	0.0080	0.1636	0.4139	0.3768
	-15.88	4.07	3.47	-4.49	5.02	-1.25	-0.21	4.11	-8.87	4.66	-2.49	1.04	-4.56	0.24	14.12	25.53	12.79
no. of obs.	494	425	413	418	413	416	417	418	418	418	416	425	416	416	416	418	425
Prob Chi²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the z-values of the GLS estimates. The probability of the Chi²-test gives the joint significance of all coefficients.

Table A-8: IV-Estimates of the Determinants of Sectoral Specialisation, EMPLOYMENT, Regional Characteristics

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
Constant	1.6371	0.1372	1.0130	1.3873	0.2771	1.0464	0.8038	0.9466	4.2425	0.8827	3.1422	0.5031	1.6747	0.8826	0.2212	0.6584	0.7934
	3.11	1.55	3.19	4.77	2.36	8.11	2.92	8.34	6.12	8.95	7.55	4.30	19.87	8.94	6.32	13.69	9.15
CENTR	-0.1254	0.0643	-0.5813	-0.4148	-0.2339	-0.8325	-0.5711	-0.5274	-4.0903	-0.1845	-1.3432	0.1053	0.0654	0.3555	0.2324	0.2973	0.7764
	-0.34	1.07	-2.71	-2.15	-2.95	-9.79	-3.15	-7.01	-8.91	-2.82	-4.89	1.33	1.18	5.46	10.07	9.33	13.22
PODEN	-0.2563	-0.0366	-0.0849	-0.1063	-0.0130	0.1009	0.0725	0.0106	0.5569	0.0452	0.0533	-0.1254	-0.0044	-0.0396	0.2511	0.0001	-0.0873
	-2.63	-2.38	-1.56	-2.15	-0.65	4.63	1.56	0.55	4.73	2.70	0.76	-6.16	-0.31	-2.37	42.43	0.01	-5.80
DIST	-0.0005	0.0001	0.0002	-0.0005	-0.0002	-0.0004	-0.0004	-0.0005	-0.0029	-0.0004	-0.0006	0.0005	0.0003	0.0002	0.0000	0.0001	0.0002
	-1.98	2.99	0.94	-3.30	-2.63	-6.42	-3.09	-8.75	-8.53	-8.75	-3.04	8.22	7.60	3.77	1.26	6.06	5.65
GRP (IV)	-0.0165	0.0004	0.0017	-0.0025	0.0028	0.0054	0.0035	-0.0002	0.0126	0.0034	0.0019	-0.0008	-0.0006	0.0008	0.0009	0.0011	-0.0029
	-9.59	1.11	1.56	-2.45	6.85	11.98	3.63	-0.45	5.17	9.87	1.32	-1.99	-2.06	2.46	7.68	6.39	-9.45
QUINN_OPENN	0.1124	-0.0002	-0.0066	0.0300	0.0046	-0.0168	-0.0068	-0.0005	0.0019	-0.0148	-0.0330	0.0247	-0.0144	0.0023	0.0002	-0.0082	0.0188
	3.02	-0.03	-0.29	1.45	0.55	-1.83	-0.35	-0.06	0.04	-2.11	-1.11	2.98	-2.41	0.33	0.06	-2.39	3.06
AREA	0.0108	-0.0027	-0.0184	0.0015	-0.0010	0.0038	-0.0083	0.0023	0.0220	0.0013	0.0188	-0.0072	-0.0023	-0.0047	0.0016	0.0001	0.0003
	1.58	-2.10	-3.76	0.36	-0.53	2.06	-2.08	1.41	2.19	0.91	3.13	-4.15	-1.89	-3.28	3.09	0.15	0.21
UEWP (IV)	0.1751	0.0090	-0.0187	-0.0146	-0.0011	-0.0300	-0.0052	-0.0175	-0.1280	-0.0254	-0.1051	0.0414	-0.0127	-0.0080	-0.0061	-0.0032	0.0221
	12.37	3.95	-2.34	-2.00	-0.39	-9.31	-0.75	-6.12	-7.34	-10.24	-10.08	13.77	-6.02	-3.23	-7.01	-2.61	9.91
DUM_FRA	-1.3692	0.1286	0.1762	-0.4458	0.0680	0.1752	0.5489	0.4383	-1.4828	0.2106	-0.1691	0.0498	-0.2987	0.0193	0.1519	0.2528	0.0463
	-9.82	4.75	1.72	-5.10	1.80	4.54	6.68	12.85	-7.12	7.11	-1.36	1.39	-11.85	0.65	14.51	17.50	1.75
DUM_IRE	-0.8277	0.2291	1.3571	0.2039	0.2979	0.7455	0.5874	1.0579	1.1413	0.4048	0.2989	0.1253	0.0547	-0.0936	0.1519	-0.5878	-0.4203
	-1.23	1.98	3.11	0.52	1.85	4.20	1.60	6.94	1.23	3.06	0.52	0.82	0.47	-0.69	3.15	-9.10	-3.70
DUM_DEN	-1.2227	0.0198	0.4963	-0.3713	0.0412	0.4915	0.2951	0.7943	-0.7240	0.2784	0.1355	0.2710	-0.3615	-0.0745	0.1857	-0.3615	0.3492
	-2.31	0.23	1.53	-1.27	0.34	3.80	1.07	6.94	-1.04	2.80	0.32	2.39	-4.28	-0.75	5.29	-7.46	4.16
DUM_LUX	-1.9979	-0.0176	4.8288	0.2267	0.0399	0.5835	-0.0623	0.3002	0.1036	0.0123	0.6621	0.6767	-0.1238	-0.2587	1.0866	-0.0268	-0.8902
	-3.78	-0.21	14.89	0.76	0.33	4.21	-0.21	2.59	0.15	0.12	1.48	6.15	-1.37	-2.44	28.88	-0.55	-10.92
DUM_BEL	-2.8892	0.1206	0.3764	-0.4607	0.1954	-0.0557	-0.0043	0.1469	-2.1581	0.1528	-0.3972	0.0604	-0.1335	-0.0067	0.1585	0.4200	0.3768
	-14.48	3.68	3.21	-4.37	4.51	-1.20	-0.04	3.57	-8.59	4.28	-2.65	1.39	-4.39	-0.19	12.55	24.09	11.73
no. of obs.	438	371	360	364	360	362	363	364	364	364	362	371	362	362	362	364	371
Prob F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the t-values of the IV estimates. The probability of the F-test gives the joint significance of all coefficients.

Table A-9: GLS Estimates of the Determinants of Sectoral Specialisation (EMPL.), Regional Characteristics including DLABCOST

	AGRO	FUEL	META	MINE	CHEM	METP	TREQ	FOOD	TEXT	PAPE	VARI	BUIL	TRLO	TRCO	CRED	OTHS	NMSE
Constant	3.8892	-0.0891	0.7918	0.9652	-0.0782	0.6649	0.1701	0.8780	4.3770	0.6673	2.8371	1.1832	1.5398	0.3252	0.0373	0.6597	0.6227
	7.02	-2.05	2.51	3.26	-0.99	5.41	0.69	7.08	5.34	7.33	5.82	7.84	13.51	3.27	1.10	12.73	8.02
DLABCOST	-0.4996	0.0213	0.0674	0.0349	0.0608	0.0418	0.0751	-0.0209	-0.2355	0.0133	-0.0841	-0.0716	0.0070	0.1055	0.0265	0.0264	0.0266
	-10.74	5.81	2.35	1.30	8.48	3.74	3.35	-1.86	-3.16	1.61	-1.90	-5.65	0.68	11.67	8.58	5.60	4.08
CENTR	0.3944	0.0465	-0.3730	-0.8283	-0.2608	-0.7130	-0.5898	-0.3462	-3.7686	-0.0735	-0.7710	0.3217	0.0236	0.0296	0.1353	0.2501	0.5479
	1.05	1.57	-1.79	-4.23	-5.00	-8.78	-3.62	-4.23	-6.96	-1.22	-2.39	3.14	0.31	0.45	6.03	7.31	10.40
PODEN	-0.5988	0.0006	-0.1142	0.1610	-0.0165	0.1178	0.1469	-0.0096	0.6965	-0.0572	0.0758	-0.2064	-0.0288	0.0711	0.2842	-0.0020	-0.0374
	-5.53	0.07	-1.92	2.88	-1.11	5.08	3.16	-0.41	4.50	-3.33	0.83	-7.00	-1.34	3.79	44.36	-0.21	-2.47
DIST	0.0001	0.0002	0.0006	-0.0010	-0.0001	-0.0002	-0.0004	-0.0005	-0.0047	-0.0004	-0.0002	0.0007	0.0003	0.0000	0.0000	0.0001	0.0001
	0.39	6.55	3.21	-5.80	-2.56	-3.22	-2.61	-6.86	-10.34	-7.62	-0.69	7.41	4.63	0.88	-1.82	5.03	2.52
GRP	0.0007	-0.0009	-0.0008	-0.0100	0.0014	0.0053	-0.0005	0.0003	0.0112	0.0035	0.0047	0.0027	-0.0021	-0.0021	-0.0002	0.0010	-0.0036
	0.23	-3.82	-0.49	-6.52	3.31	8.31	-0.35	0.49	2.64	7.29	1.84	3.37	-3.53	-4.04	-1.07	3.57	-8.68
QUINN_OPENN	-0.0752	0.0231	0.0142	0.0802	0.0286	0.0004	0.0313	-0.0021	0.0090	-0.0093	-0.0413	-0.0296	-0.0014	0.0537	0.0170	-0.0060	0.0408
	-1.74	6.81	0.57	3.42	4.59	0.04	1.61	-0.21	0.14	-1.29	-1.07	-2.51	-0.16	6.83	6.33	-1.46	6.74
AREA	-0.0415	-0.0024	-0.0226	0.0408	-0.0008	0.0062	0.0105	0.0070	0.0970	0.0075	0.0265	-0.0228	0.0013	-0.0059	0.0042	-0.0037	-0.0006
	-3.23	-2.35	-3.29	6.33	-0.46	2.33	1.95	2.58	5.43	3.77	2.50	-6.51	0.50	-2.70	5.64	-3.29	-0.34
UEWP	0.1754	0.0041	-0.0240	-0.0459	0.0065	-0.0260	-0.0058	-0.0189	-0.1784	-0.0207	-0.1096	0.0443	-0.0136	0.0016	-0.0059	0.0003	0.0213
	13.41	3.97	-3.36	-6.84	3.64	-9.35	-1.04	-6.74	-9.61	-10.02	-9.93	12.43	-5.28	0.70	-7.73	0.27	11.60
DUM_IRE	2.0264	0.2798	1.5415	-1.6104	0.2709	0.5491	-0.4248	0.6894	-3.5223	-0.0594	-0.3472	0.8351	-0.1006	0.1506	0.0737	-0.3737	-0.2015
	2.41	4.22	3.36	-3.74	2.36	3.08	-1.18	3.83	-2.96	-0.45	-0.49	3.64	-0.61	1.04	1.49	-4.96	-1.71
DUM_DEN	2.5246	-0.0482	0.2788	-1.1789	-0.1971	0.1374	-0.4557	0.6003	-2.5174	-0.0647	-0.0540	0.8863	-0.3976	-0.2764	0.0711	-0.3613	0.3777
	4.83	-1.17	0.95	-4.30	-2.70	1.21	-1.99	5.23	-3.32	-0.77	-0.12	6.22	-3.77	-3.00	2.26	-7.53	5.15
DUM_LUX	2.0740	-0.1977	4.2254	0.2091	-0.3200	0.3153	-0.4398	0.3611	1.3262	-0.0581	1.1097	1.0700	-0.1362	-0.7688	0.9742	-0.2307	-0.9574
	3.79	-4.59	14.40	0.76	-4.36	2.76	-1.92	3.13	1.74	-0.69	2.45	7.18	-1.28	-8.31	30.84	-4.79	-12.49
DUM_BEL	-6.7478	0.1552	1.0219	-0.8235	0.8400	0.3095	0.4831	-0.0118	-5.0615	0.8644	-1.4356	-0.6039	0.1723	0.6388	0.3182	0.6678	0.6038
	-14.97	4.38	3.89	-3.34	12.79	3.03	2.35	-0.11	-7.41	11.40	-3.54	-4.92	1.81	7.71	11.25	15.48	9.56
no. of obs.	239	239	235	235	235	235	235	235	235	235	235	239	235	235	235	235	239
Prob Chi²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the z-values of the GLS estimates. The probability of the Chi²-test gives the joint significance of all coefficients.

Table A-10: GLS and IV Estimates of the Determinants of Sectoral Specialisation (GFCF), including ES

	FUEL		MINE		CHEM		METP		TREQ		FOOD		TEXT		PAPE		BUIL	
	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV
Constant	0.8180	0.2758	2.3444	3.6543	0.1678	-0.5443	0.8974	0.6599	-0.6072	-1.0852	0.6984	0.1658	1.4898	1.5681	1.0207	0.6256	0.6405	0.7523
	1.62	0.47	5.48	5.76	0.74	-1.56	6.14	3.13	-1.00	-1.30	2.56	0.40	3.56	2.40	2.53	1.14	8.25	5.98
CENTR	0.0326	-0.2963	-0.9168	-1.0129	-0.8926	-1.4816	-0.7064	-0.8153	-0.5508	-0.5776	-0.8274	-0.9160	-1.9990	-1.9453	-0.5334	-0.5548	0.0920	0.0833
	0.13	-1.11	-4.39	-4.25	-7.72	-8.80	-9.83	-9.29	-1.86	-1.65	-6.34	-5.68	-9.37	-6.40	-2.74	-2.47	2.52	1.93
PODEN	-1.2902	-1.1909	-1.4416	-1.7174	-0.4378	-0.6988	-0.4763	-1.3996	-0.5700	-0.9556	-0.5061	0.0840	-0.7840	-1.1886	0.3524	0.5674	-0.5754	-0.7148
	-1.60	-1.32	-2.06	-1.96	-1.17	-1.42	-1.94	-3.88	-0.57	-0.75	-1.16	0.15	-1.19	-1.39	0.54	0.72	-4.87	-4.98
DIST	-0.1392	-0.1714	-0.7639	-0.8267	-0.3369	-0.3332	-0.3743	-0.3579	-0.6295	-0.7105	-0.8551	-0.8749	-1.0001	-0.9155	-0.5288	-0.4504	0.0535	0.0479
	-0.83	-0.96	-5.29	-4.59	-4.32	-3.37	-7.67	-5.90	-3.09	-2.91	-9.69	-8.23	-5.83	-4.13	-3.93	-2.83	2.13	1.61
GRP	0.0015	0.0025	0.0040	0.0049	0.0047	0.0066	0.0039	0.0064	0.0025	0.0035	0.0007	-0.0013	0.0100	0.0106	-0.0001	-0.0009	0.0014	0.0019
	0.56	0.86	1.74	1.70	3.76	4.09	4.92	5.70	0.76	0.86	0.47	-0.66	4.65	3.87	-0.03	-0.35	3.44	4.03
ES	0.0119	0.0152	0.0373	0.0477	0.0874	0.1927	0.0486	0.1557	0.0572	0.0495	0.0752	0.1579	0.0441	0.0018	0.0619	0.0873	0.0013	-0.0021
	7.20	7.22	2.49	1.25	10.35	8.89	6.10	5.70	10.74	6.58	5.74	5.53	2.11	0.04	4.00	3.34	0.32	-0.27
QUINN_OPENN	0.0053	0.0346	-0.0467	-0.1392	0.0062	0.0333	-0.0099	-0.0126	0.0806	0.1308	0.0126	0.0136	-0.0246	-0.0275	-0.0062	0.0176	-0.0203	-0.0266
	0.14	0.81	-1.51	-3.45	0.37	1.40	-0.93	-0.87	1.83	2.21	0.64	0.51	-0.83	-0.60	-0.22	0.47	-3.54	-3.22
AREA	0.0037	0.0014	-0.0011	-0.0023	-0.0056	-0.0101	-0.0005	-0.0067	-0.0029	-0.0054	0.0013	0.0066	0.0070	0.0058	-0.0037	-0.0028	-0.0015	-0.0026
	0.60	0.20	-0.20	-0.37	-1.96	-2.71	-0.25	-2.55	-0.38	-0.57	0.38	1.43	1.29	0.82	-0.74	-0.49	-1.59	-2.29
UEWP	0.0645	0.0623	-0.0048	-0.0069	0.0028	-0.0068	-0.0323	-0.0318	0.0031	0.0002	-0.0115	-0.0134	-0.0089	0.0045	-0.0365	-0.0452	0.0092	0.0111
	5.42	4.26	-0.51	-0.57	0.55	-0.94	-10.10	-7.56	0.23	0.01	-2.05	-1.86	-1.04	0.41	-4.23	-4.17	5.87	5.72
DUM_FRA	-0.4090	-0.2582	-0.7184	-0.8921	0.2203	0.5750	0.0384	0.1651	0.1904	0.2697	0.2409	0.2660	-0.8374	-0.9224	0.2887	0.3826	-0.0401	-0.0623
	-3.75	-1.89	-7.84	-5.62	4.43	6.44	1.28	3.41	1.65	1.82	4.51	3.78	-9.01	-6.91	3.56	3.62	-2.22	-1.92
no. of obs.	314	262	313	260	312	259	314	262	305	252	291	238	279	202	313	260	287	230
Prob Chi² / F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the z-(t-)values of the GLS (IV) estimates. The probability of the Chi²/F-test gives the joint significance of all coefficients.

Table A-11: GLS and IV Estimates of the Determinants of Sectoral Specialisation (EMPLOYMENT), including ES

	FUEL		MINE		CHEM		METP		TREQ		FOOD		TEXT		PAPE		BUIL	
	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV
Constant	0.1797	0.2018	1.3088	-0.0098	0.2061	-0.5070	0.8628	0.0405	0.2076	-0.5402	0.8648	0.5146	3.8310	3.8685	0.7590	0.4992	0.7996	0.9896
	1.74	1.43	3.90	-0.02	1.74	-2.45	4.42	0.13	0.56	-1.06	5.22	1.86	3.27	1.84	6.03	2.78	4.63	3.16
ES	0.0013	0.0018	0.0870	0.1932	0.0393	0.0946	0.0627	0.2117	0.0296	0.0350	0.0438	0.0850	-0.0352	-0.2248	0.0234	0.0304	-0.0373	-0.0578
	4.53	4.63	8.48	6.27	10.15	8.64	6.80	6.28	9.92	8.82	5.84	4.83	-0.70	-2.03	5.59	4.51	-4.59	-3.87
CENTR	0.0193	-0.0079	-0.5543	-0.7456	-0.3123	-0.6253	-0.8011	-0.9127	-0.5131	-0.5080	-0.4576	-0.4922	-4.2844	-4.1099	-0.1691	-0.1839	0.1094	0.1079
	0.44	-0.16	-3.88	-4.11	-5.73	-7.29	-9.61	-8.88	-3.28	-3.04	-6.34	-5.62	-8.38	-5.31	-3.20	-3.19	1.49	1.30
PODEN	0.1694	0.2016	-0.9440	-1.7389	-0.1862	-0.1965	-0.4426	-1.6274	0.4030	-0.0052	-0.6063	-0.3421	0.2709	0.8907	-0.1122	-0.2071	-1.9018	-1.9911
	1.21	1.19	-1.97	-2.57	-1.08	-0.86	-1.56	-3.81	0.76	-0.01	-2.54	-1.07	0.17	0.42	-0.64	-1.01	-8.10	-7.29
DIST	0.1014	0.0892	-0.6517	-0.9270	-0.1720	-0.2307	-0.4256	-0.3803	-0.3047	-0.3133	-0.4966	-0.5086	-3.5889	-3.9123	-0.3664	-0.3680	0.4479	0.4492
	3.21	2.42	-6.11	-6.09	-3.71	-3.83	-6.96	-4.93	-2.63	-2.46	-9.73	-8.39	-8.76	-6.47	-9.28	-8.19	8.56	7.57
GRP	-0.0006	-0.0007	0.0006	0.0040	0.0030	0.0036	0.0060	0.0092	0.0016	0.0026	0.0009	-0.0002	0.0128	0.0107	0.0036	0.0039	0.0054	0.0058
	-1.16	-1.13	0.35	1.65	4.96	4.55	6.12	6.69	0.85	1.24	1.10	-0.15	2.33	1.47	5.85	5.51	6.52	6.17
QUINN_OPENN	0.0005	-0.0006	0.0157	0.0743	0.0004	0.0424	-0.0088	0.0235	0.0124	0.0677	-0.0101	-0.0018	0.0639	0.1056	-0.0154	0.0045	0.0224	0.0132
	0.06	-0.06	0.63	1.80	0.05	2.93	-0.61	1.06	0.45	1.82	-0.83	-0.10	0.75	0.70	-1.67	0.36	1.72	0.63
AREA	-0.0017	-0.0020	-0.0045	-0.0077	-0.0021	-0.0031	-0.0005	-0.0086	-0.0024	-0.0034	-0.0006	0.0022	0.0280	0.0459	-0.0009	-0.0018	-0.0146	-0.0141
	-1.45	-1.43	-1.15	-1.46	-1.38	-1.57	-0.21	-2.51	-0.55	-0.68	-0.28	0.82	1.98	2.22	-0.63	-1.11	-7.44	-6.07
UEWP	-0.0019	-0.0046	-0.0185	-0.0110	-0.0030	-0.0109	-0.0318	-0.0334	-0.0153	-0.0165	-0.0093	-0.0112	-0.1210	-0.1318	-0.0188	-0.0204	0.0531	0.0587
	-0.91	-1.63	-2.82	-1.14	-1.30	-3.13	-8.48	-6.65	-2.17	-1.98	-2.98	-2.81	-5.78	-4.67	-7.94	-7.18	16.72	15.56
DUM_FRA	0.1464	0.1839	-0.1643	0.2786	0.1738	0.4157	0.2960	0.5845	0.6189	0.7381	0.4452	0.4749	-1.6785	-2.1494	0.2684	0.3300	0.0039	-0.0900
	6.63	5.74	-2.14	1.65	6.14	7.46	6.77	7.08	8.04	7.25	13.02	9.65	-5.94	-4.15	9.79	8.54	0.10	-1.12
DUM_DEN	--	--	-0.4601	-0.6307	0.0826	0.2439	0.4786	0.4658	0.3395	0.2736	0.5287	0.3438	-1.1792	-1.9299	0.3570	0.3655	--	--
	--	--	-1.43	-1.27	0.72	1.38	2.55	1.66	0.97	0.60	3.27	1.42	-1.12	-1.21	2.99	2.31	--	--
no. of obs.	270	218	271	217	266	213	272	219	268	213	271	217	240	161	271	217	265	208
Prob Chi² / F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the z-(t-)values of the GLS (IV) estimates. The probability of the Chi²/F-test gives the joint significance of all coefficients.

Table A-12: GLS and IV Estimates of the Determinants of Sectoral Specialisation (GFCF) including DPROD

	FUEL		MINE		CHEM		METP		TREQ		FOOD		TEXT		PAPE		BUIL	
	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV
Constant	-0.7608	-0.6941	1.4478	1.6150	0.3171	0.2649	0.8645	0.9544	-0.0618	0.1164	0.8483	0.8606	1.5615	1.4407	1.3157	1.3861	0.8240	0.7956
	-1.60	-1.36	3.50	3.35	1.49	1.05	6.08	5.88	-0.09	0.14	3.68	3.12	3.97	3.21	4.33	3.95	11.36	9.75
DPROD	0.0110	0.0115	0.0133	0.0139	0.0104	0.0145	0.0018	-0.0042	0.0531	0.0375	0.0108	0.0157	-0.0104	-0.0093	0.0191	0.0265	-0.0074	-0.0084
	5.91	5.10	1.70	1.42	3.77	3.36	0.51	-0.88	5.52	2.42	3.24	2.71	-1.57	-0.62	4.19	3.85	-4.62	-3.48
CENTR	0.7020	0.6580	-0.9439	-0.9871	-0.4561	-0.4914	-0.6699	-0.6810	-0.4365	-0.5214	-0.8084	-0.8391	-1.7939	-1.7957	-0.6014	-0.6709	0.1034	0.0960
	2.87	2.57	-4.47	-4.12	-4.14	-3.88	-9.21	-8.45	-1.28	-1.33	-6.95	-6.36	-8.90	-8.06	-3.84	-3.69	2.81	2.45
PODEN	-1.0314	-0.9767	-1.2232	-1.1116	-0.2961	-0.3055	-0.0512	0.2464	-3.0013	-2.6540	-1.0615	-1.1796	-1.4035	-1.5100	-0.5240	-0.5156	-0.4525	-0.5783
	-1.33	-1.14	-1.82	-1.37	-0.86	-0.73	-0.21	0.79	-2.71	-1.80	-2.86	-2.65	-2.21	-2.03	-1.09	-0.91	-3.91	-4.36
DIST	0.1578	0.2562	-0.9588	-1.0699	-0.2631	-0.2858	-0.3478	-0.3506	-0.5828	-0.7635	-0.8654	-0.9236	-0.8430	-0.8573	-0.6937	-0.7415	0.0598	0.0545
	0.85	1.28	-5.87	-5.61	-2.72	-2.55	-6.27	-5.52	-2.15	-2.37	-9.78	-8.91	-5.32	-4.50	-5.88	-5.36	2.14	1.78
GRP	-0.0028	-0.0025	0.0018	0.0009	0.0037	0.0034	0.0040	0.0032	0.0092	0.0082	0.0032	0.0035	0.0132	0.0131	0.0034	0.0029	0.0010	0.0015
	-0.98	-0.81	0.74	0.29	2.83	2.17	4.73	3.14	2.36	1.66	2.34	2.14	5.72	4.89	1.97	1.46	2.37	3.10
QUINN_OPENN	0.1441	0.1268	0.0432	0.0318	0.0055	0.0077	-0.0059	-0.0097	0.0883	0.0907	0.0314	0.0304	-0.0179	-0.0120	-0.0184	-0.0255	-0.0300	-0.0256
	4.09	3.39	1.42	0.90	0.35	0.42	-0.56	-0.81	1.78	1.56	1.85	1.53	-0.62	-0.37	-0.83	-1.03	-5.71	-4.53
AREA	0.0142	0.0149	0.0074	0.0114	0.0014	0.0011	0.0037	0.0051	-0.0259	-0.0241	-0.0012	-0.0014	0.0048	0.0060	-0.0047	-0.0033	-0.0012	-0.0029
	2.03	1.90	1.21	1.52	0.42	0.28	1.75	2.02	-2.61	-1.90	-0.37	-0.35	0.83	0.85	-1.08	-0.63	-1.19	-2.43
UEWP	0.0822	0.0915	-0.0083	-0.0078	0.0138	0.0190	-0.0310	-0.0386	0.0515	0.0351	-0.0084	-0.0045	-0.0183	-0.0130	-0.0149	-0.0095	0.0037	0.0035
	7.52	7.37	-0.86	-0.66	2.87	3.13	-7.27	-6.46	3.10	1.46	-1.64	-0.70	-1.89	-0.88	-1.81	-0.81	1.69	1.04
DUM_FRA	-0.5501	-0.6742	-0.6899	-0.7437	-0.0669	-0.0511	-0.0333	-0.0478	0.3168	0.3252	0.2526	0.2726	-0.7970	-0.8067	0.1261	0.1067	-0.0525	-0.0330
	-4.80	-5.19	-6.87	-6.02	-1.26	-0.79	-0.96	-1.15	2.01	1.64	4.68	4.11	-8.37	-6.88	1.81	1.31	-3.09	-1.71
DUM_IRE	--	--	-0.1129	-0.3896	0.5355	0.6301	--	--	--	--	1.8890	1.8203	0.5246	0.4353	0.7949	0.7991	-0.2880	-0.2264
			-0.22	-0.62	2.01	1.91					6.72	5.21	1.08	0.74	2.19	1.84	-3.49	-2.44
DUM_DEN	-0.8637	-0.8163	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-0.0708	-0.0665
	-2.05	-1.80															-1.13	-0.97
DUM_LUX	-0.9157	-0.7576	0.0977	0.0042	0.1709	0.1698	0.2531	0.1953	0.3931	0.1641	0.3151	0.3771	2.1666	2.1256	-0.0218	0.0994	-0.2953	-0.2927
	-2.25	-1.72	0.27	0.01	0.97	0.81	2.10	1.42	0.68	0.23	1.61	1.61	6.15	4.49	-0.08	0.30	-4.58	-3.79
no. of obs.	297	253	295	251	291	248	292	249	284	241	295	251	294	250	289	244	301	256
Prob Chi² / F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.111	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the z-(t-)values of the GLS (IV) estimates. The probability of the Chi²/F-test gives the joint significance of all coefficients.

Table A-13: GLS and IV Estimates of the Determinants of Sectoral Specialisation (EMPLOYMENT) including DPROD

	FUEL		MINE		CHEM		METP		TREQ		FOOD		TEXT		PAPE		BUIL	
	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV	GLS	IV
Constant	0.0896	0.1306	1.3974	1.5431	0.2550	0.2541	1.0430	1.0266	0.8832	0.8469	0.8692	0.8897	4.0137	4.3588	0.8910	0.9322	0.9217	0.8790
	1.04	1.42	5.54	5.30	2.45	2.15	8.83	7.90	3.55	3.09	8.36	7.50	6.43	6.09	9.56	8.81	8.58	6.75
DPROD	-0.0010	-0.0008	0.0209	0.0330	0.0040	0.0056	0.0036	0.0035	-0.0026	-0.0026	0.0052	0.0054	-0.0057	-0.0240	0.0015	0.0009	-0.0239	-0.0227
	-3.54	-2.70	5.76	5.24	4.26	3.73	2.45	2.11	-3.97	-3.65	3.03	1.96	-0.48	-1.01	1.57	0.68	-8.85	-5.93
CENTR	0.0423	0.0549	-0.4580	-0.4194	-0.2727	-0.2700	-0.8462	-0.8279	-0.5828	-0.5532	-0.5149	-0.5110	-3.9892	-4.1261	-0.1875	-0.1735	0.1573	0.1383
	0.72	0.90	-2.68	-2.20	-3.79	-3.40	-10.59	-9.72	-3.45	-3.06	-7.37	-6.75	-9.44	-8.86	-3.02	-2.57	2.30	1.86
PODEN	-0.0371	-0.0377	-0.1692	-0.2205	0.0182	0.0296	0.0982	0.0958	0.0515	0.0508	0.0091	0.0076	0.5462	0.6114	0.0471	0.0452	-0.1206	-0.1181
	-2.49	-2.42	-3.75	-4.12	0.95	1.29	4.79	4.36	1.19	1.09	0.51	0.39	4.93	4.68	2.95	2.60	-6.89	-6.19
DIST	0.1222	0.1314	-0.5945	-0.6238	-0.2203	-0.2235	-0.4212	-0.4028	-0.4319	-0.4128	-0.4819	-0.4881	-2.7434	-2.8427	-0.4047	-0.3913	0.5355	0.5151
	2.89	2.93	-4.75	-4.33	-3.52	-3.21	-7.27	-6.41	-3.49	-3.06	-9.54	-8.78	-8.95	-8.21	-8.93	-7.81	10.77	9.34
GRP	0.0006	0.0005	-0.0031	-0.0039	0.0025	0.0022	0.0053	0.0052	0.0035	0.0033	-0.0004	-0.0004	0.0128	0.0133	0.0033	0.0032	-0.0009	-0.0008
	1.91	1.57	-3.32	-3.72	6.48	5.09	12.33	11.37	3.89	3.47	-0.96	-0.96	5.64	5.20	10.14	9.25	-2.42	-2.05
QUINN_OPENN	0.0019	-0.0011	0.0306	0.0253	0.0065	0.0081	-0.0183	-0.0164	-0.0083	-0.0059	0.0032	0.0022	0.0095	0.0004	-0.0150	-0.0162	0.0071	0.0106
	0.30	-0.16	1.67	1.22	0.86	0.96	-2.13	-1.78	-0.46	-0.30	0.42	0.27	0.21	0.01	-2.24	-2.21	0.95	1.26
AREA	-0.0024	-0.0026	0.0023	0.0034	0.0001	0.0002	0.0037	0.0042	-0.0099	-0.0091	0.0025	0.0029	0.0197	0.0210	0.0003	0.0003	-0.0083	-0.0086
	-1.95	-1.94	0.63	0.82	0.05	0.11	2.18	2.23	-2.77	-2.29	1.71	1.72	2.20	2.06	0.22	0.22	-5.69	-5.27
UEWP	0.0094	0.0097	-0.0070	-0.0082	0.0006	0.0000	-0.0264	-0.0283	-0.0084	-0.0097	-0.0151	-0.0157	-0.1222	-0.1426	-0.0240	-0.0266	0.0212	0.0216
	4.43	4.18	-1.13	-1.12	0.23	0.01	-8.83	-8.35	-1.36	-1.39	-5.86	-5.15	-7.38	-6.21	-9.88	-9.07	6.59	4.75
DUM_FRA	0.1124	0.1197	-0.4739	-0.5646	0.0710	0.0659	0.1770	0.1668	0.5780	0.5527	0.4462	0.4447	-1.3749	-1.4396	0.2189	0.2075	0.0343	0.0463
	4.42	4.31	-6.32	-6.31	2.16	1.75	5.09	4.30	7.92	6.76	14.78	12.95	-7.48	-6.70	8.28	7.01	1.16	1.37
DUM_IRE	--	--	0.1580	0.0540	0.2036	0.1877	--	--	--	--	1.0956	1.0791	1.3719	1.2950	0.4799	0.4609	0.0299	0.0491
	--	--	0.42	0.12	1.27	1.02	--	--	--	--	7.07	6.11	1.47	1.20	3.54	3.04	0.20	0.28
DUM_DEN	0.0420	0.0444	-0.3699	-0.4459	0.0570	0.0570	0.5317	0.5037	0.3159	0.2605	0.8117	0.7919	-0.6143	-0.7384	0.3297	0.3064	0.2767	0.3040
	0.46	0.46	-1.38	-1.47	0.51	0.46	4.24	3.72	1.20	0.91	7.45	6.64	-0.93	-1.00	3.42	2.91	2.58	2.58
DUM_LUX	0.0477	0.0339	0.0108	-0.2812	0.0609	0.0474	0.5949	0.5694	-0.1443	-0.1624	0.3659	0.3530	0.2636	0.5741	0.0178	-0.0316	0.2706	0.3131
	0.48	0.32	0.04	-0.82	0.51	0.35	4.42	3.84	-0.51	-0.52	3.09	2.63	0.35	0.61	0.17	-0.26	2.25	2.21
DUM_BEL	0.1515	0.1411	-0.4849	-0.5583	0.1285	0.0875	-0.0484	-0.0476	0.0595	0.0742	0.1768	0.1690	-2.0336	-2.2126	0.1368	0.1305	0.0416	0.0415
	4.70	4.15	-5.21	-5.27	3.04	1.69	-1.12	-1.02	0.64	0.73	4.61	3.95	-8.83	-8.52	4.10	3.63	1.12	1.02
no. of obs.	410	355	414	358	409	354	410	355	407	352	414	358	414	358	408	351	414	358
Prob Chi² / F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: Lines below coefficients report the z-(t-)values of the GLS (IV) estimates. The probability of the Chi²/F-test gives the joint significance of all coefficients.