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Research Report

Online Annex – Economic Challenges of Lagging Regions: Annex II – Econometric Analysis and Supplemental Tables

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Online Annex - Economic Challenges of Lagging Regions:

Annex II - Econometric Analysis and Supplemental Tables

Roman Römisch (wiiw, coordinator) and Stefan Jestl



Online Annex – Economic Challenges of Lagging Regions:

Annex II – Econometric Analysis and Supplemental Tables

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Abstract

The report is an annex to wiiw Research Report 423, 'Economic Challenges of Lagging Regions III: Recent Investment Trends and Needs'. Based on spatial econometric methods it provides estimates and simulations of the investment effects on economic development in the EU lagging regions. It also provides additional data related to the analysis in the wiiw Research Report 423.

Keywords: regional economic development, EU, lagging regions, regional policy, economic challenges, investment, foreign direct investment, structural funds

JEL classification: C15, C31, C80, R11, Y10

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1. Analysis of investment impacts on economic activity and opportunity costs

This annex to Task 3 focuses on the investments' impact on economic performance (measured in terms of productivity growth) in the lagging regions as well as on the opportunity costs of investment. As far as the impact is concerned, it is understood as the effects investments (National accounts, Structural Funds and FDI) have on regional productivity levels and growth (measured as GDP per employed), as well as on GDP per capita and on employment growth and levels. As far as opportunity costs are concerned, they are understood in two ways (both of them are going to be analysed):

- A) Opportunity costs I: Would investment be more effective if it was allocated differently across sectors/activities of a region's economy?
- B) Opportunity costs II: Would investment be more effective if it was concentrated in the most productive regions (core) instead of in the lagging regions (periphery)?

Question A) analyses the regions' investment pattern and explores whether the effects on economic growth would have been different if this pattern had been different, e.g. whether for a region it would have been better to invest in R&D than in infrastructure. Question B) addresses the question whether the concentration of investment in core agglomeration regions might be more effective (at an aggregate level) than supporting the peripheral lagging regions, as agglomeration externalities could be more fully exploited.

To analyse these issues (i.e. the effects of investment and both opportunity costs) the study uses spatial econometrics and undertake simple simulations. As far as the econometric set-up is concerned there is a large literature to draw upon. Some recent examples are OECD (2012¹), Dall'erba and Le Gallo (2007²), Esposti and Bussoletti (2008³), Becker et al.(2010⁴) as well as Mohl and Hagen (2010⁵), the latter also provide a comprehensive overview of related previous literature.

The analysis in the study will follow the analysis of the OECD, Mohl and Hagen as well as Dall'erba and Le Gallo. That is, the study will estimate a model including elements from the neoclassical and endogenous growth theory and from new economic geography using a spatial cross section model identify regional factors of growth.

¹ OECD, 2012, 'Promoting Growth in All Regions', OECD.

² Dall'erba, S., Le Gallo, J, 2007, 'Regional convergence and the impact of European structural funds over 1989–1999: A spatial econometric analysis', Papers in Regional Science, Volume 87 Number 2 June 2008.

³ Esposti, R., Bussoletti, S., 2008, 'Impact of Objective 1 Funds on Regional Growth Convergence in the European Union: A Panel-data Approach', Regional Studies, Vol. 42.2, pp. 159–173, March 2008.

⁴ Becker, S., Egger, P., von Ehrlich, P., 2010, 'Going NUTS: The effect of EU Structural Funds on regional performance', Journal of Public Economics 94 2010.

⁵ Mohl, P., Hagen, T., 2010, 'Do EU structural funds promote regional growth? New evidence from various panel data approaches', Regional Science and Urban Economics 40 2010.

The following parts include a) a description of the data used, b) the estimation methodology and c) the estimation results, d) simulations regarding the effects of a shift of investments between regions on aggregate productivity growth and finally conclusions.

1.1. DATA

The data three main types of variables, i.e. a) the dependent variables, i.e. regional productivity growth defined as the ratio of real GDP over employment, using the annual average growth rate, b) the main explanatory variables of interest, i.e. region national accounts, Structural Funds and foreign direct investment and c) additional explanatory variables.

As far as the dependent variables are concerned data has been collected for regional productivity growth and levels. All variables are based on Eurostat regional accounts data. To estimate real productivity growth rates for the regions, constant regional time series (base year = 2010) have been estimated, by adjusting current regional time series with constant national time series for GDP, using constant GDP at the country level and the regions' share in total country GDP.

For this the latest available data from Eurostat has been used, which for most countries provides full regional time series from 2000 to 2014. Exceptions are Belgium (no regional accounts data prior to 2003) and Hungary (no employment data prior to 2008). For both countries the missing data was backcast using older Eurostat time series, basically using the growth rates from the older time series to fill the holes in the most recent data set. Moreover, for Hungary and Finland only data up to 2013 was available. Because of this, the econometric analysis generally uses annual average growth rates (or changes) of productivity as dependent variables (assuming that the missing year for Hungary and Finland only has little effect on the overall growth trend).

The main explanatory variables are regional national accounts investment, Structural Funds (ERDF and Cohesion fund) investment as well as regional FDI. The data for these variables is identical to the data used in the descriptive analysis above.

Three explanatory variables have been defined from national accounts investment data: a) regional investment as percent of regional GDP, b) regional investment (in real terms) per capita and c) real growth of investment, in all cases for total investment as well as for investment in manufacturing industries. For all variants averages over the period 2000-2012 have been used in the analysis.

As far as FDI data is concerned the main explanatory variable is the number of FDI projects by inhabitants (both for total FDI as well as FDI by sectors).

As far as Structural Funds investments are concerned the main explanatory variables are total ERDF and CF investments (in sum) as well as "productive" ERDF and CF investments, i.e. containing only investment expenditures for R&D, Human resources and enterprise support, in percent of GDP and investment per capita.

As an additional explanatory variable the analysis also uses the spatially lagged investment shares or growth, i.e. the investment in neighbouring regions to account for potential spillover or clustering effects.

The additional explanatory variables include:

- › Initial productivity levels, to capture convergence effects
- › Low skilled labour supply: share of low skilled in active population
- › High skilled labour supply: share of active highly skilled in population or employment
- › Population density to adjust for urbanisation effects
- › Initial capital endowment per capita, to adjust for regional differences in capital intensity
- › Market potential: spatially weighted GDP levels, to adjust for potential agglomeration effects
- › Sectoral structure: initial shares of sectors in employment to adjust for regional specialisation and also general regional characteristics (which are assumed to be highly correlated with the sectoral structure)
- › Regional Quality of Governance indicator from the Gothenburg regional quality of governance database
- › Accessibility, i.e. accessibility of population by road (i.e. number of people that can be reached by car within 5 hours travel time) from the ESPON TRACC project.

These variables are used in the analysis (in logarithms), with most of them having been described above in the section on investment needs.

The expectations regarding the impact of these variables on the regions' economic performance are:

- › Investment is expected to have positive effects on productivity, employment and GDP growth, because of technological, capacity and aggregate demand effects. Hence the estimated coefficients should be positive.
- › The initial productivity level should have a negative impact on productivity growth if there is a (beta-) convergence in productivity levels across EU regions; i.e. the higher (lower) the initial productivity the lower (higher) the productivity growth.
- › Ceteris paribus a high share of low skilled population should have negative effects on economic performance and vice versa for the share of highly skilled population.
- › Population density is expected to have a positive effect on productivity and GDP growth, largely because of region specific agglomeration effects.
- › The expected effects of the initial capital stock are unclear, as a high initial capital stock might indicate a higher technological capacity of the regions thus being favourable to productivity or GDP growth. On the other hand, if there are decreasing returns to the capital stock, less prosperous regions (with a lower initial capital stock) may find it easier to catch up in productivity or GDP.
- › Regarding the sectoral structure expectations are that an advanced structure (high share of high and medium high technology intensive industry, high share of knowledge intensive services, low share of agriculture) should positively affect the economic performance of regions, while a less advanced structure should have dampening effects.
- › Quality of governance is expected to be positively correlated with productivity growth, given that a stable governance environment has positive external effects on the economy.

- › Accessibility is expected to be positively correlated with productivity growth due to the assumption of the existence of agglomeration externalities.

1.2. ECONOMETRIC SET-UP AND ESTIMATION MODEL

Prior to the estimations expectations are that all used forms of investment (national accounts, FDI, ERDF/CF) may have different impacts on the lagging regions depending on whether they are low growth regions in the South or low growth regions in the East. To test this hypothesis the analysis estimates three different types of models, a) a standard regression model without differentiating across regions, b) a model with one spatial regime, i.e. testing whether investment had a different impact in the lagging regions (as a whole) and the other regions and c) an model with two spatial regimes, testing whether investment impacts differed between low growth, low income and other regions.

As the analysis focuses on the EU regions and the respective data usually shows a significant spatial dependence of the regions, OLS estimation quite likely would lead to biased and inconsistent estimates. Moreover the spatial dependence of the EU regions or the size of regional spillovers is itself of interest, so that the analysis uses spatial econometric techniques. To examine the presence of spatial effects, the analysis starts with estimating OLS and using the residuals of the estimations for testing for (spatial) misspecification using Moran's I.

That is the following equations are estimated via OLS:

$$y = I\beta + X\gamma + \varepsilon$$

for the model with only one spatial regime, and

$$y = \begin{bmatrix} \beta_{LR} \\ \beta_{OR} \end{bmatrix} \begin{bmatrix} I_{LR} & 0 \\ 0 & I_{OR} \end{bmatrix} + \begin{bmatrix} \gamma_{LR} \\ \gamma_{OR} \end{bmatrix} \begin{bmatrix} X_{LR} & 0 \\ 0 & X_{OR} \end{bmatrix} + \varepsilon$$

for the model differentiating between lagging and other regions, i.e. two spatial regimes. Furthermore, two modified models with two spatial regimes are estimated as well, with the first of those models only considering the low growth lagging regions in the South, and the second uses low income lagging regions only (all other regions are put in the "other regions" group). All models use the assumption $\varepsilon \sim N(0, \sigma^2 I_n)$.

In the above equations y represents productivity growth, I represents investment (national accounts, FDI or ERDF/CF), β is the estimated coefficient for investment, and X are all other explanatory variables with the corresponding estimated coefficient γ . The subscripts denote the regional groups, whereby LR stands for lagging regions (as a whole or for low income or low growth lagging regions), OR for other regions.

In the analysis OLS estimation were run for all possible variants of models (52 in total). All of them show strong signs of spatial misspecification and the presence of spatial dependence. This is illustrated by the following example for national accounts investment and the two spatial regimes model (see Table 1.1; other OLS results are given in the Annex).

Table 1.1 / OLS results, national accounts investment, two spatial regimes.

| Variables: | Investment as % of GDP | Investment per inhabitant | Investment growth |
|---|------------------------|---------------------------|-----------------------|
| Initial productivity Lagging Regions (LR) | -2.540 ^{***} | -3.735 ^{***} | -3.070 ^{***} |
| Initial productivity Other Regions (OR) | -2.056 ^{***} | -2.609 ^{***} | -2.013 ^{***} |
| High skilled share LR | -0.758 | -0.661 | -0.51 |
| High skilled share OR | 0.797 ^{***} | 0.741 ^{***} | 0.680 ^{***} |
| Low skilled share LR | 0.112 | -0.281 | 0.690 [*] |
| Low skilled share OR | -0.384 ^{***} | -0.292 ^{**} | -0.275 ^{**} |
| Population density LR | 0.486 ^{**} | 0.411 [*] | 0.203 |
| Population density OR | 0.026 | 0.012 | 0.001 |
| Initial capital stock LR | 0.281 | 0.247 | 0.989 [*] |
| Initial capital stock OR | 0.12 | -0.049 | 0.238 |
| Market potential LR | 0.012 ^{***} | 0.009 ^{**} | 0.008 [*] |
| Market potential OR | 0.001 | 0.002 | 0.0003 |
| Initial industry share LR | -0.549 [*] | -0.506 | -0.45 |
| Initial industry share OR | -0.124 | -0.085 | -0.093 |
| Initial agriculture share LR | 0.557 ^{**} | 0.327 | 0.450 [*] |
| Initial agriculture share OR | 0.061 | 0.024 | 0.042 |
| Accessibility population road LR | 0.01 | 0.068 | 0.015 |
| Accessibility population road OR | -0.045 | -0.028 | -0.025 |
| Quality of governance (2013) LR | 0.073 | 0.044 | -0.066 |
| Quality of governance (2013) OR | 0.184 ^{**} | 0.216 ^{**} | 0.154 [*] |
| Investment LR | 1.627 ^{**} | 1.713 ^{***} | 0.075 ^{**} |
| Investment OR | 0.163 | 0.696 ^{***} | 0.089 ^{***} |
| Constant Lagging Regions | 2.931 | 1.771 | 7.836 ^{**} |
| Constant Other Regions | 9.428 ^{***} | 8.059 ^{***} | 8.853 ^{***} |
| Observations | 259 | 259 | 259 |
| Adjusted R-squared | 0.876 | 0.885 | 0.888 |
| Moran's I (p-value) | 0.003 | 0.006 | 0.073 |
| LMerror (p-value) | 0.133 | 0.190 | 0.709 |
| LMlag (p-value) | 0.003 | 0.005 | 0.010 |
| RLMerror (p-value) | 0.719 | 0.693 | 0.142 |
| RLMlag (p-value) | 0.011 | 0.013 | 0.003 |

Robust standard errors (not shown); *** p<0.01, ** p<0.05, * p<0.1.

The presence of spatial effects necessitates the use of spatial econometric methods. The most general spatial model is the Manski model (see Elhorst⁶, 2010). It identifies three different types of spatial interaction effects that could explain why one region may be dependent on the development in other regions. Firstly, there are endogenous interaction effects, where the development in one region depends on the development of other regions; secondly there are exogenous interaction effects, where the development in one region depends on independent explanatory variables of the other regions and thirdly there are correlated effects, where similar unobserved environmental characteristics result in similar developments across regions. The Manski model takes the form:

⁶ Elhorst, J. P. (2010), 'Applied Spatial Econometrics: Raising the Bar', *Spatial Economic Analysis*, Vol. 5, No. 1, March 2010

$$y = \rho Wy + X\beta + WX\theta + u$$

$$u = \lambda Wu + \varepsilon$$

where the variable Wy denotes the endogenous interaction effects among the dependent variables, WX the exogenous interaction effects and Wu the interaction effects among the disturbance terms of the region. Thereby ρ is the spatial autoregressive coefficient, λ the spatial autocorrelation coefficient, while θ , represents vector of fixed but unknown parameters.

All other spatial models can be derived from the Manski model, by removing or relaxing one or more spatial interaction effects. Thus, the Spatial Durbin Model (SDM) is derived by assuming λ equals zero (no spatial autocorrelation), while the Spatial Durbin Error Model (SDEM) is derived by setting ρ to zero (no spillovers from developments in other regions). Other models (like the Spatial Error Model or the Spatial Autoregressive Model) follow by relaxing even more spatial interaction effects.

In this model, W is a spatial weights matrix basically describing the distance from each region to all other regions, and thus being the basis to estimate the spatial dependence across the regions. This analysis uses a distance (in km) based weight matrix, whereby the distances between each region have been calculated as the great circle distance between the centroids of the regions (based on information regarding the geographic coordinates of the regions). In detail matrix W is a row-normalised spatial weights matrix defined as W :

$$\begin{cases} w_{i,j}^* = 0 \text{ if } i = j \\ w_{i,j}^* = 1/d^2 \text{ if } d_{i,j} \leq D \text{ and } w_{i,j} = w_{i,j}^* / \sum_j w_{i,j}^* \\ w_{i,j}^* = 0 \text{ if } d_{i,j} > D \end{cases}$$

where $d_{i,j}$ is the great circle distance (in km) between the the regions i and j ; w_{ij}^* is an element of the unstandardized weight matrix, and w_{ij} is a element of the row-standardized weight matrix, that is used in the analysis. Spatial weights are set to zero for the diagonal elements of W , i.e. the distance to the own region, as well as for regions that are further away than a certain distance cut-off point D , above which spatial dependence is expected to be negligible.

Regarding the choice of the appropriate estimation model it would be desirable to start from the most general model, i.e. the Manski model and to test down, which model is the most appropriate one. The major drawback of the Manski model however is that there are too many spatial interactions so that the parameter estimates from an estimation based on this model cannot be interpreted in a meaningful way since the endogenous and exogenous effects cannot be distinguished from each other (Elhorst, 2010).

Therefore, following Elhorst (2010⁷) and LeSage and Pace (2009⁸) the main workhorse model for the analysis is the Spatial Durbin Model (SDM). The authors suggest, as the Manski model cannot be estimated, excluding the spatially autocorrelated error term from this model (i.e. SDM) will produce more consistent estimation results than e.g. ignoring spatial dependence in the dependent variable (SDEM) as

⁷ Elhorst, J. P. (2010), 'Applied Spatial Econometrics: Raising the Bar', *Spatial Economic Analysis*, Vol. 5, No. 1, March 2010

⁸ LeSage, J. P., Pace, R. K. (2009), 'Introduction to Spatial Econometrics', Boca Raton, Taylor & Francis

it may induce a high omitted variable bias. By contrast, ignoring spatial dependence in the disturbances will only cause a loss of efficiency, but result in unbiased coefficient estimates.

Thus, the two basic SDM models are estimated using Maximum Likelihood:

$$\ln\left(\frac{y_{r,t}}{y_{r,t-1}}\right) = \alpha + \rho W\left(\frac{y_{r,t}}{y_{r,t-1}}\right) + \beta_n X_r + \gamma_n W X_r + \varepsilon_r$$

and

$$\ln\left(\frac{y_{r,t}}{y_{r,t-1}}\right) = \alpha + \rho W\left(\frac{y_{r,t}}{y_{r,t-1}}\right) + \begin{bmatrix} \beta_{n,LR} \\ \beta_{n,OR} \end{bmatrix} \begin{bmatrix} X_r & 0 \\ 0 & X_r \end{bmatrix} + \begin{bmatrix} \gamma_{n,LR} \\ \gamma_{n,OR} \end{bmatrix} \begin{bmatrix} W X_r & 0 \\ 0 & W X_r \end{bmatrix} + \varepsilon_r$$

The first model is the baseline model, estimating the effects of the regions' investment decision and other explanatory variables (all in X) on their productivity growth over the period 2000-2014. As this model is estimated (separately) for national accounts investment, Structural Funds investment and FDI, I_r is defined as follows:

- › National accounts investment: Gross fixed capital formation (total and by sectors) in % of GDP (average over the period 2000-2012), constant GFCF per capita (average over the period 2000-2012), and the 2000-2012 annual average GFCF growth rate. Thus there are three different investment measures for the national accounts investments estimations
- › Structural funds: ERDF and Cohesion fund investment in total and spending priorities in % of GDP and per capita.
- › FDI: FDI greenfield projects per capita (total and sectors)

Apart from investment, the matrix X_r contains additional independent variables, controlling for differences in the regions characteristics. The additional variables include:

- › Initial productivity levels, to capture convergence effects
- › Low and highly skilled labour supply:
- › Population density
- › Initial capital endowment per capita
- › Market potential
- › Sectoral structure: initial shares of agriculture and manufacturing in total employment
- › Within region accessibility (number of cities with more than 50.000 inhabitants that can be reached within hour road travel)
- › Across region accessibility (number of population that can be reached within 5 hours of car travel time)
- › Quality of governance

The variable $W X_r$ represents the spatially lagged explanatory variables, defined as the squared distance weighted variables (including investment) of the neighbouring regions.

The second model extends the basic model by including two spatial regimes. Thus, the regions own explanatory variables vector X_r is substituted by the matrix $\begin{bmatrix} X_{r,LR} & 0 \\ 0 & X_{r,OR} \end{bmatrix}$, which splits it regions into 'lagging' regions (denoted by LR) and the other regions (denoted by OR). Again, this second model is estimated firstly for all lagging regions, secondly for low growth lagging regions only and thirdly for low income regions only. Thus, it allows differentiating the effects of investment and the other explanatory variables on productivity growth by types of regions. The interpretation is similar for the spatially lagged explanatory variables WX_r .

A fundamental aspect in the SDM model is the presences of spatial feedback loops. To illustrate, a change in a region r 's investment variable has effects on the region itself, yet, through spatial spillovers also affects developments in other regions. These developments in other regions (caused by the initial change of region r 's investment) feed back again to the original region and so on. Thus, to estimate the effects of a change in investment on the regions' productivity correctly, these feedback loops have to be taken into account. Similar is the case of changes in other regions investment. Through spillovers the investment in other regions affects developments in the original region, and these developments feed back again to the other regions and so on.

The first feedback loop (emanating from changes in the original region) are usually understood as direct effects, while the second feedback loop (effects from other regions investment decisions) as indirect effects. Standard regression output (in Stata) does not report these direct and indirect effects, but rather only report the estimated coefficients (which correspond to feedback-free effect). Therefore these effects have been estimated separately (including inference) following the method proposed in LeSage and Pace (2009).

1.3. ESTIMATION RESULTS

All three models have been run for national accounts investment, FDI and Cohesion policy investment. Throughout all models the dependent variable is the growth of regional productivity in the period 2000-2014. Investment (total and manufacturing) has been defined in three different ways, as investment in % of GDP, investment per capita and investment growth. Estimations were separately run for all three investment variables.

The presentation of results are split by the models estimated, i.e. firstly the results for the regression with one spatial regime are described, secondly the results for the models with two spatial regimes using all lagging regions in the lagging regions sample, followed by the results for the model with two spatial regimes using only low-growth lagging regions and finally the results of the two spatial regimes model using only low-income lagging regions.

All results will be described on the basis of estimated direct and indirect effects. Furthermore, since the focus of the estimations is on the effects of the investment variables, only those will be presented in more detail, while the results for the other explanatory variables are given as an overview. The complete estimation output is included in a separate Annex.

Model with one spatial regime

The table below summarises the investment related variants of the estimated model with one spatial regime, showing the direct, indirect and total effects of the different types of investment on productivity growth in the region. As can be seen from the table:

- › aggregate national accounts investment per capita and aggregate investment growth (but not for investment rates in % of GDP) have a significant direct positive effect on productivity growth, with investment growth also exerting positive significant indirect effects to neighbouring regions.
- › Manufacturing investment has positive direct effects on growth
- › Total FDI inflows have positive and significant direct effects on productivity growth. The same holds for services FDI, but not necessarily for manufacturing FDI.
- › Cohesion policy investment from the ERDF and CF, both in total and for productive investment, tend to be negatively associated with productivity growth (as direct effects).

Table 1.2 / Direct, indirect and total effects of investment variables, model with one spatial regime

| | Direct effect | Indirect effect | Total effect |
|---|------------------|-----------------|-----------------|
| Investment as % of GDP | 0.316 | 0.568 | 0.884 |
| Investment per inhabitant | 1.14*** | -0.253 | 0.887 |
| Investment growth | 0.06*** | 0.136*** | 0.196*** |
| Investment Manufacturing as % of GDP | 0.264** | 0.249 | 0.513 |
| Investment Manufacturing per inhabitant | 0.489*** | 0.120 | 0.609 |
| Investment Manufacturing growth | 0.018** | 0.050 | 0.068** |
| Number of FDI per capita total | 0.025*** | 0.017 | 0.042 |
| Number of FDI per capita manufacturing | -0.032 | 0.172 | 0.140 |
| Number of FDI per capita service | 0.038*** | 0.030 | 0.068* |
| CF/ERDF as % of GDP | -0.11*** | 0.161 | 0.051 |
| CF/ERDF per inhabitant | -0.071* | 0.094 | 0.023 |
| CF/ERDF productive as % of GDP | -0.15*** | 0.198 | 0.048 |
| CF/ERDF productive per inhabitant | -0.119*** | 0.151 | 0.032 |

Models with two spatial regimes (All lagging regions – other regions)

Following the model with one spatial regime, the next model estimated was the model with two spatial regimes, whereby the first regime consists of all lagging regions (i.e. both low income and low growth lagging regions), while the second regime consists of all other regions. The table below again summarises the results of the estimated variants by showing the direct, indirect and total effects of the different types of investment on productivity growth in the lagging and the other regions.

As far the as investment variables are concerned they show the following:

- › National accounts investments has significant positive effects on productivity growth in the lagging and the other regions. In the lagging regions all three national accounts variables are significant, while in the other regions only investment per capita and investment growth shows significant direct effects (investment in % of GDP shows positive indirect effects, though).
- › Similar, manufacturing investment is positively associated with productivity growth in the lagging regions (all three variables) as the high and significant direct effects indicate. In the other regions only manufacturing investment growth shows significant direct effects on productivity growth.
- › Total regional FDI as well as services have significant direct effects, while manufacturing FDI has indirect effects in the other regions. In the lagging FDI is generally not associated with productivity growth, except for services FDI that shows weakly significant positive indirect effects.
- › Total Cohesion policy investment is significant and negatively associated (direct effects) both in the lagging as well as in the other regions. Similar holds for productive Cohesion policy investment

Further investigation suggest that the estimated negative effects from Cohesion policy investment on productivity growth may be mainly due to Romanian and Bulgarian regions (especially for the lagging regions group). In both countries the regions received a relatively small amount of Structural funds (compared to other Central and East European countries), yet had relatively good productivity growth performance over the last years. As such, the performance of these regions was, given the amount of Structural funds they received quite distinct from the performance of other regions.

Table 1.3 / Direct, indirect and total effects of investment variables, model with two spatial regimes (all lagging regions – other regions)

| | Lagging regions | | | Other regions | | |
|---|------------------|-----------------|-----------------|------------------|-----------------|-----------------|
| | direct effect | indirect effect | total effect | direct effect | indirect effect | total effect |
| Investment as % of GDP | 1.188** | -3.805 | -2.617 | -0.006 | 1.321* | 1.315* |
| Investment per inhabitant | 1.415*** | -2.567 | -1.152 | 0.722*** | 0.274 | 0.996** |
| Investment growth | 0.069*** | 0.356*** | 0.425*** | 0.099*** | 0.004 | 0.103* |
| Investment Manufacturing as % of GDP | 0.707** | -1.507 | -0.800 | 0.075 | 0.191 | 0.266 |
| Investment Manufacturing per inhabitant | 0.860*** | -1.379 | -0.519 | 0.276*** | 0.09 | 0.366 |
| Investment Manufacturing growth | 0.026** | 0.19*** | 0.217*** | 0.022** | 0.039 | 0.061* |
| Number of FDI per capita total | -0.011 | 0.243 | 0.232 | 0.025*** | 0.015 | 0.04*** |
| Number of FDI per capita manufacturing | -0.101 | 0.767 | 0.666 | -0.02 | 0.143** | 0.122* |
| Number of FDI per capita service | 0.073 | 1.019* | 1.092* | 0.037*** | 0.015 | 0.052*** |
| CF/ERDF as % of GDP | -0.464** | -0.395 | -0.859 | -0.113*** | 0.046 | -0.067 |
| CF/ERDF per inhabitant | -0.432** | -1.221 | -1.653 | -0.095** | 0.018 | -0.077 |
| CF/ERDF productive as % of GDP | -0.637*** | 0.757 | 0.120 | -0.145*** | 0.02 | -0.125 |
| CF/ERDF productive per inhabitant | -0.619*** | 0.381 | -0.238 | -0.134*** | -0.002 | -0.136* |

Models with two spatial regimes (Low growth lagging regions – other regions)

As a variant to the model with two spatial regimes, a model was estimated that also contained two regimes. In contrast to the above model, though, the first regime was only made up by the low growth lagging regions, while the second regimes consisted of all other regions (including the low income lagging regions). The results of estimating this model are shown in the table below, where, again, only the effects of the respective investment variables are shown.

Table 1.4 / Direct, indirect and total effects of investment variables, model with two spatial regimes (low growth lagging regions – other regions)

| | Low growth lagging regions | | | Other regions | | |
|---|----------------------------|-----------------|--------------|------------------|-----------------|-----------------|
| | direct effect | indirect effect | total effect | direct effect | indirect effect | total effect |
| Investment as % of GDP | -1.293 | -5.148 | -6.441 | 0.351 | 0.866 | 1.217 |
| Investment per inhabitant | -1.432 | -9.889 | -11.320 | 1.268*** | -0.246 | 1.022* |
| Investment growth | -0.066 | -0.305 | -0.370 | 0.061*** | 0.174** | 0.235*** |
| Investment Manufacturing as % of GDP | 0.391 | -2.901 | -2.511 | 0.284** | -0.302 | -0.017 |
| Investment Manufacturing per inhabitant | 0.456 | -2.965 | -2.509 | 0.568*** | -0.144 | 0.424 |
| Investment Manufacturing growth | 0.057 | -0.311 | -0.254 | 0.019* | 0.115** | 0.135*** |
| Number of FDI per capita total | -0.438 | -4.570 | -5.007 | 0.026*** | 0.012 | 0.038 |
| Number of FDI per capita manufacturing | 0.346 | -7.498 | -7.152 | -0.028 | 0.116 | 0.088 |
| Number of FDI per capita service | -0.585 | -6.197* | -6.782* | 0.039*** | 0.024 | 0.064* |
| CF/ERDF as % of GDP | -0.247 | 6.614 | 6.367 | -0.113** | 0.037 | -0.077 |
| CF/ERDF per inhabitant | -0.197 | 6.239 | 6.043 | -0.07 | -0.025 | -0.095 |
| CF/ERDF productive as % of GDP | -0.826 | 1.152 | 0.326 | -0.152*** | 0.049 | -0.102 |
| CF/ERDF productive per inhabitant | -0.761 | 0.423 | -0.338 | -0.118*** | 0.016 | -0.102 |

The results of the estimations showed the following:

- › As far as the low growth lagging regions are concerned, no type of investment showed any effects (direct or indirect) on productivity growth in the regions.
- › With respect to the other regions, the effects are very similar to those of the other estimations. Hence, aggregate and manufacturing national account investment tend to have mostly direct positive effects on productivity growth; similar holds for total and services FDI. By contrast, Structural funds investment is negatively associated (i.e. negative direct effects) with regional productivity growth.

Models with two spatial regimes (Low income lagging regions – other regions)

The other variant of the two spatial regimes model includes only low income lagging regions in the first regime, while the low growth lagging regions as well as all other regions are grouped in the second regime. Estimating this variant for all investment variables shows the following results (see table below):

- › Aggregate and manufacturing national account investment have strong direct, indirect and as a result total effects on productivity growth in the low income lagging regions.
- › FDI has no direct effects in the low income lagging regions, but strong indirect effects.
- › Structural funds investment effects are generally not significant, except for productive Structural investment if measured by capita. For the latter variable strong positive direct effects on the low income lagging regions were detected.
- › As far as the other regions are concerned, the effects of the investment variables on productivity growth are again highly similar to those of the other models.

Table 1.5 / Direct, indirect and total effects of investment variables, model with two spatial regimes (low income lagging regions – other regions)

| | Lagging regions | | | Other regions | | |
|---|-----------------|------------------|------------------|------------------|-----------------|-----------------|
| | direct effect | indirect effect | total effect | direct effect | indirect effect | total effect |
| Investment as % of GDP | 6.471*** | 23.639** | 30.11** | 0.095 | 0.897* | 0.992** |
| Investment per inhabitant | 4.043*** | 17.2** | 21.244*** | 0.706*** | -0.072 | 0.634 |
| Investment growth | 0.010 | 1.191*** | 1.2*** | 0.082*** | 0.044 | 0.127*** |
| Investment Manufacturing as % of GDP | 6.86*** | 22.858** | 29.718*** | 0.132 | 0.406 | 0.538** |
| Investment Manufacturing per inhabitant | 4.774*** | 15.709** | 20.483*** | 0.307*** | 0.137 | 0.444** |
| Investment Manufacturing growth | 0.017 | 0.744*** | 0.76*** | 0.033*** | 0.007 | 0.04** |
| Number of FDI per capita total | 0.035 | 2.326** | 2.361** | 0.026*** | 0.016 | 0.043*** |
| Number of FDI per capita manufacturing | 0.362 | 14.736*** | 15.099*** | -0.023 | 0.22*** | 0.198*** |
| Number of FDI per capita service | 0.119 | 3.972** | 4.091** | 0.038*** | 0.018 | 0.056*** |
| CF/ERDF as % of GDP | -0.501 | -11.609 | -12.109 | -0.106*** | 0.142 | 0.036 |
| CF/ERDF per inhabitant | 0.751 | -4.195 | -3.445 | -0.085* | 0.109 | 0.024 |
| CF/ERDF productive as % of GDP | 1.417 | -2.096 | -0.679 | -0.13*** | 0.134 | 0.003 |
| CF/ERDF productive per inhabitant | 2.479** | 2.233 | 4.713 | -0.115*** | 0.103 | -0.012 |

Effects of other explanatory variables, specification tests

As far as the other explanatory variables are concerned, their coefficients and effects are fairly robust over all estimations made. Summarising the effects of these variable shows:

- › Most models show a strong (beta-) convergence of productivity across EU regions with the convergence coefficient (direct effect) being around -2.0, as far as direct effects are concerned. The initial productivity level also shows strong positive and significant indirect effects, indicating that regions neighbouring high productivity regions benefit from economic spillovers and potential spatial cluster and agglomeration effects.

- › The share of highly educated in the labour force had no significant impact in the model with one spatial regime. However, in the models with two spatial regimes high skills have a positive direct effect in the other regions, but not in the lagging regions.
- › The effects for market potential, the initial industry share, accessibility, and population density are generally insignificant across models.
- › The direct effects for the initial capital stock per capita are positive and significant in the model with one spatial regime. However, the indirect effects from the capital stock are highly negative and significant, which may indicate the presence of competition across neighbouring regions. In the models with two regimes, the capital stock has significant effects almost only in the other regions.
- › Quality of governance shows no significant direct effects, but the indirect effects are significant and positive, which most likely can be attributed to the fact that a stable country governance environment (as most neighbouring regions are from the same country) is conducive to productivity growth.

For all models a spatial Chow tests were done to test whether the estimated coefficients vary between the lagging and the other regions. For all estimated models, except the two regimes model defining the low-growth regions as lagging regions the Chow test was in favour of the split of regimes as the H0 was strongly rejected (see Annex results).

1.4. SIMULATIONS – SCENARIO ANALYSIS

Based on the results of the econometric analysis this step analyses the spatial opportunity costs of investment, i.e. the question, “whether investment would be more effective if it was concentrated in the core regions instead of in the lagging regions?” For this, the analysis follows the ideas put forward in OECD (2012⁹) and in Dall’erba and Le Gallo (2008¹⁰) and simulates two scenarios using the regression results from above (i.e. the results for the models with two spatial regimes).

The two scenarios are defined as follows:

1. A 10% **increase of investment** in the **lagging** regions, keeping total country investment constant; i.e. investment in the **core** regions is **reduced** by the amount investment increases in the lagging regions. The reduction of investment in the core regions is assumed to be proportional to their share in aggregate investment (of the core regions).
2. A 10% **decrease of investment** in the **lagging** regions, keeping total country investment constant; i.e. investment in the **core** regions is **increased** by the amount investment decreases in the lagging regions. The increase of investment in the core regions is assumed to be proportional to their share in aggregate investment (of the core regions).

To define a baseline scenario the analysis uses the regression coefficients estimated by the model with two spatial regimes above to compute the predicted productivity growth rates by region (annual average over the period 2000-2014). These regional growth rates are then used to estimate the aggregate country productivity growth. This is the predicted baseline growth rate.

⁹ OECD, 2012, ‘Promoting Growth in All Regions’, OECD.

¹⁰ Dall’erba, S., Le Gallo, J, 2008, ‘Regional convergence and the impact of European structural funds over 1989–1999: A spatial econometric analysis’, Papers in Regional Science, Volume 87 Number 2 June 2008.

Given this, the analysis simulates a 10% increase of investment in the lagging regions and a correspondent decrease of investment in the core regions in order to estimate the predicted productivity growth rates for scenario 1. This scenario growth rates are then employed to estimate the aggregate country productivity growth. This country scenario growth is compared to the baseline growth rate. For scenario 2 the procedure is the same, except that investment is increased by 10% in the core regions and reduced in the lagging regions. This has been done for:

- › **Aggregate national accounts investment:** in % of regional GDP, per capita and investment growth
- › **Manufacturing investment:** in % of regional GDP, per capita and investment growth
- › **Total ERDF and CF investment:** in % of regional GDP, per capita
- › **Productive ERDF and CF investment:** in % of regional GDP, per capita

FDI are not taken into consideration, given the insignificant estimation results, especially for the lagging regions.

The simulations are based on the estimated two spatial regimes model. As three variants of this model have been estimated (i.e. all lagging regions, only low growth lagging regions, only low income lagging regions), simulations have also been made for each of these variants.

All estimations and simulations were done in R. The results of the analysis are presented below (showing the differences in productivity growth rates between the baseline and the scenarios in percentage points).

Aggregate national accounts investment

Starting with the simulations based on the two regimes model using all lagging regions as one regime (and the other regions as the second regime), the results are shown in the figure below. Hence, the simulations suggest that an increase of investment (in the simulations using investment in % of GDP and per capita) in the lagging regions (scenario 1) had negative effects on productivity growth in all lagging regions countries (compared to the baseline), as the negative effects of the reduced investment in the core regions and the spillovers from this were stronger than the positive effects from the increase of investment in the lagging regions. By contrast, scenario 2 resulted in aggregate productivity growth rates that were higher than in the baseline, as a shift of investment from the lagging regions to the core regions, generated strong direct effects in the core regions themselves but also had positive spillover effects on the lagging regions. These positive or negative effects for the simulations using investment as % of GDP and investment growth are mostly around 0.5 to 1 percentage points, except for Greece and Bulgaria (in the case of per capita investment), where the effects are larger (2 p.p. in Greece, and 1.4 p.p. in Bulgaria). In the case of investment growth variable, the simulation showed no sizeable effects.

As far as the simulations on the basis of the other variants of the two spatial regimes model are concerned the figure below shows a) in the left graph the simulations based on the model only using the low growth lagging regions and b) in the right graphs the simulations only using the low income lagging regions.

Figure 1.1 / Aggregate investment: Comparison of scenario effects on aggregate productivity growth; Spatial regimes: 1) all lagging regions, 2) other regions

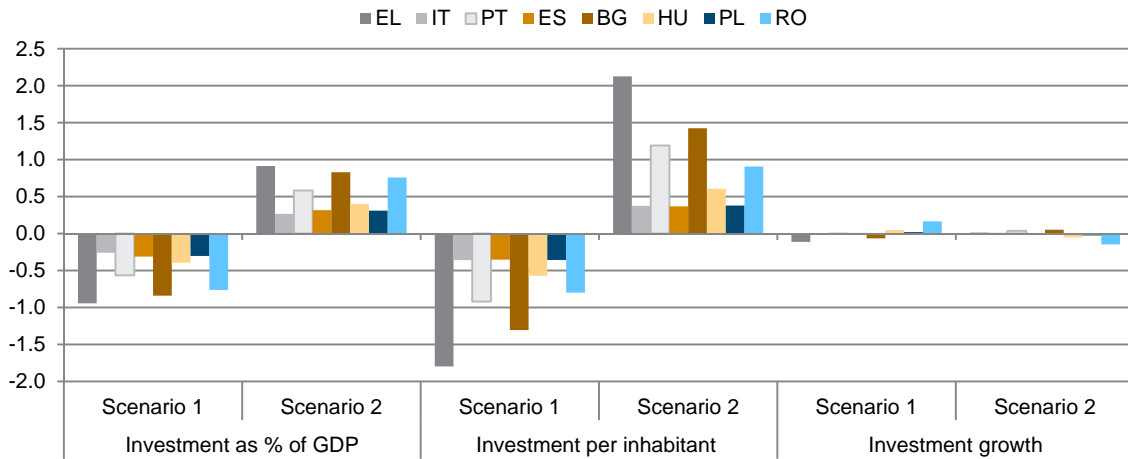
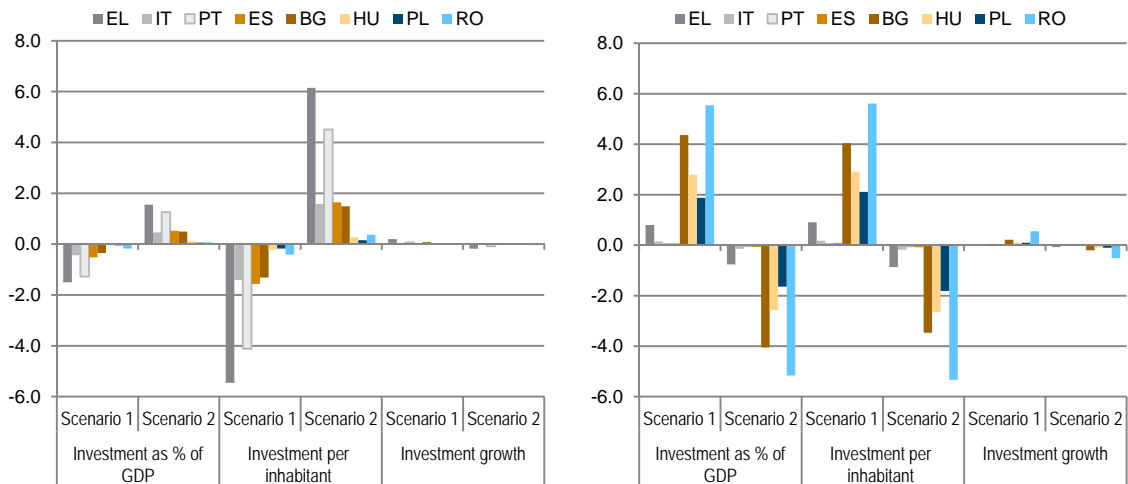


Figure 1.2 / Aggregate investment: Comparison of scenario effects on aggregate productivity growth

Left graph: spatial regimes: 1) low growth lagging regions, 2) other regions

Right graph: spatial regimes: 1) low income lagging regions, 2) other regions



As far as the low growth lagging regions variant is concerned (left graph), the simulations show a similar pattern as above. Hence an increase of investment in the low growth lagging regions tends to reduce aggregate country productivity growth, while an increase of investment in the core regions of the respective country has positive effects on aggregate growth. Notably, in contrast to the results above, the positive and negative effects are much more pronounced in these simulations (up to 6 p.p. in the case of Greece), indicating a quite strong differentiation between the core and the lagging regions in the Southern countries.

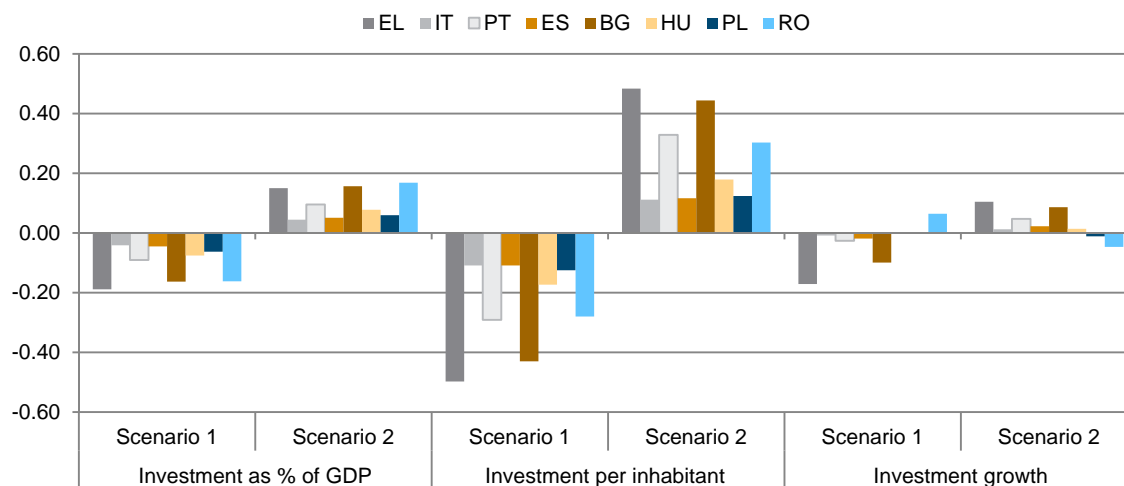
Considering the low income regions (right graph), the simulations deviate from the other findings so far, as they suggest that increasing investment in the lagging regions is conducive to aggregate country growth, while an increase of investment in the core regions, accompanied by a decrease in the lagging regions would reduce overall country productivity growth.

Manufacturing investment

Turning to the simulation regarding manufacturing investment, the structure of the analysis is the same as before. Hence, the first graph presents the data for the simulations based on the two spatial regimes model using all lagging regions. The second graph presents the results for the two additional variant of this model.

The simulation based on the model with all lagging regions (Figure 1.3) and using manufacturing investment as investment variable basically shows the same results as the simulations for aggregate investment. Hence an increase of investment in the lagging regions tends to reduce aggregate country growth and vice versa for an increase of investment in the core regions. However, compared to aggregate investment the effects of a shift in manufacturing investment are considerably smaller at around 0.1 to 0.4 p.p.

Figure 1.3 / Manufacturing investment: Comparison of scenario effects on aggregate productivity growth; spatial regimes: 1) all lagging regions, 2) other regions



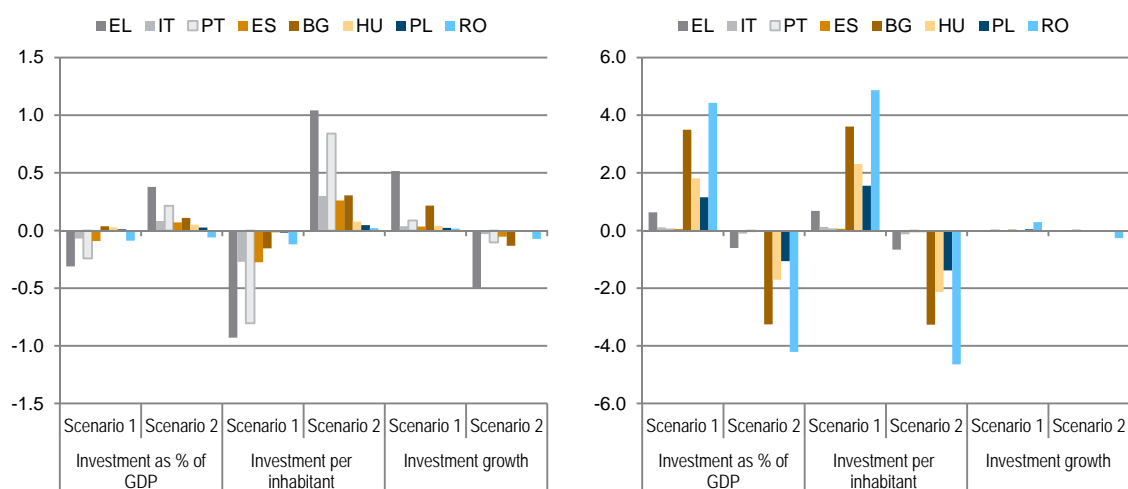
Also the simulations based on the two variants of the two regimes model and manufacturing investment (see Figure 1.4) yield similar results as it was the case for the respective simulations using aggregate investment. Hence, in the case of the low growth lagging regions variant, the simulations suggest that an increase of investment in the low-growth lagging regions tends to reduce aggregate country productivity growth. By contrast if manufacturing investment was increased in the core regions, country productivity would increase.

Oppositely, in the case of the low income lagging regions variant, the simulation show, that increasing investment in the lagging regions would have positive effects on aggregate country growth and vice versa for an increase of investment in the core regions.

Figure 1.4 / Manufacturing investment: Comparison of scenario effects on aggregate productivity growth

Left graph: spatial regimes: 1) low growth lagging regions, 2) other regions

Right graph: spatial regimes: 1) low income lagging regions, 2) other regions



ERDF and CF investments, total and productive

As for national accounts investment, similar simulations have been done using Structural funds investment, both total and productive investment, to analyse the effects of potential shifts therein on aggregate country productivity growth. Again, the basis for the simulations were the three variants of the two spatial regimes model estimated above; i.e. the first considering all lagging regions, the second only low growth lagging regions and the third only considering low income lagging regions. The results of the simulations are presented in the figures below.

Using the model considering all lagging regions, the simulations suggest that for total Structural funds investment (see Figure 1.5), a shift of investment from the lagging regions to the core regions would increase aggregate country productivity growth, while shifting investment to the lagging regions would lower it. Thereby the estimated effects are relatively small, if Structural funds investment is measured in % of GDP (i.e. aggregate productivity growth would increase or decrease by around 0.1 percentage points), and somewhat higher if measured in per capita terms (i.e. an average increase or decrease of country productivity growth of 0.4 percentage points).

Figure 1.5 / Structural funds investment: Comparison of scenario effects on aggregate productivity growth; Spatial regimes: 1) all lagging regions, 2) other regions

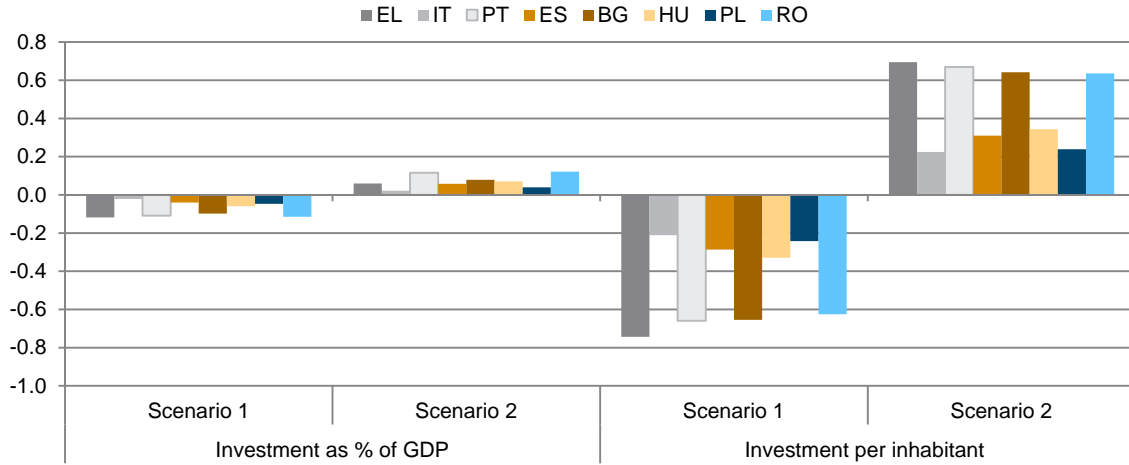
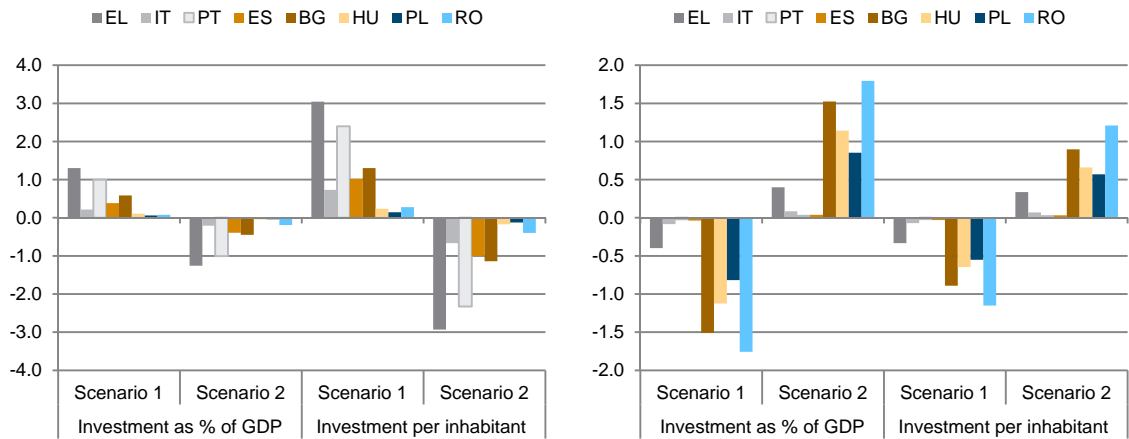


Figure 1.6 / Structural funds investment: Comparison of scenario effects on aggregate productivity growth

Left graph: spatial regimes: 1) low growth lagging regions, 2) other regions

Right graph: spatial regimes: 1) low income lagging regions, 2) other regions



However, if the simulations are based on the model only considering low growth lagging regions, the results show a different tendency. In these simulations a shift of investment from the core regions to the lagging regions would actually increase aggregate country productivity growth, mostly so in Greece and Portugal. On the other side, increasing Structural funds investment in the core regions at the cost of the low growth lagging regions would reduce country productivity growth.

The simulations based on the model only considering low income lagging regions suggest in turn, that country productivity growth could be increased if Structural funds investments are shifted to the core regions.

Figure 1.7 / Productive Structural funds investment: Comparison of scenario effects on aggregate productivity growth; Spatial regimes: 1) all lagging regions, 2) other regions

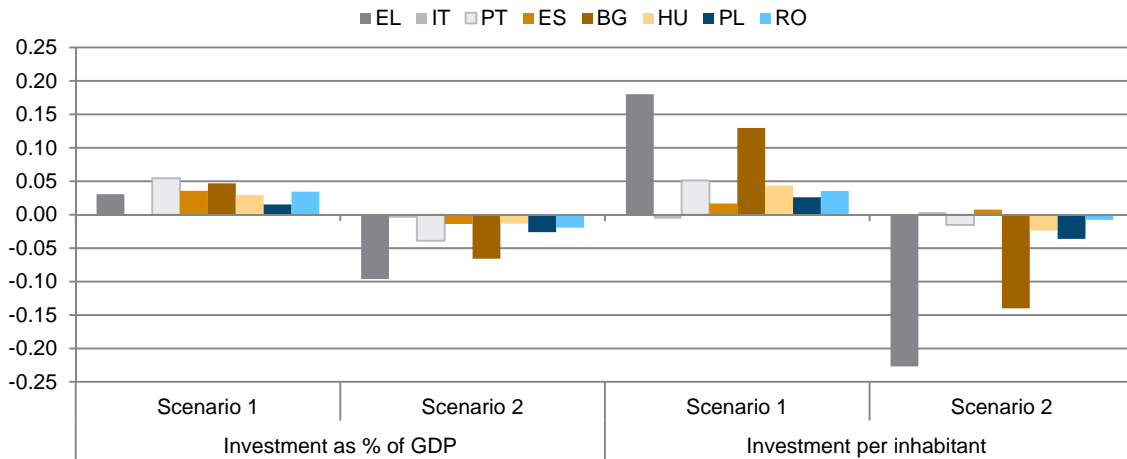
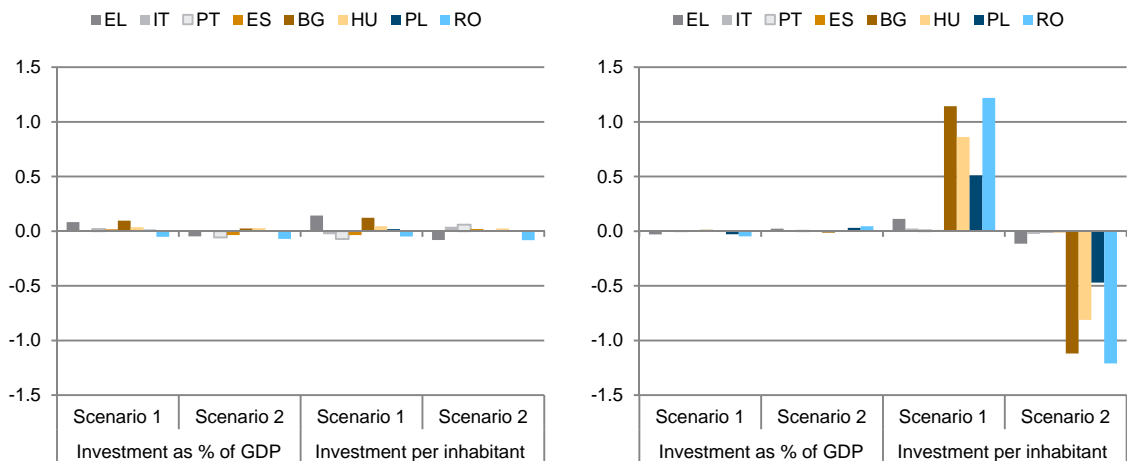


Figure 1.8 / Productive Structural funds investment: Comparison of scenario effects on aggregate productivity growth

Left graph: spatial regimes: 1) low growth lagging regions, 2) other regions

Right graph: spatial regimes: 1) low income lagging regions, 2) other regions



The simulations using productive Structural funds investment as main investment variable affecting productivity growth provide somewhat different results to the above simulations. The simulations based on the model variants using a) all lagging regions (Figure 1.7) and b) considering only low income lagging regions (Figure 1.8 right graph), suggest that a shift of investment from the core regions to the lagging regions could have positive effects on county productivity growth, although in most cases the effects are relatively small. The results of the simulations based on the model considering only low growth lagging regions (Figure 1.8 left graph) indicate that investment shifts from or to the lagging regions have only negligible small effects on aggregate productivity growth.

2. Additional tables for chapter 5 in part III¹¹ of the main report – Analysis of main investment trends

2.1. AGGREGATE INVESTMENT TABLES

Table 2.1 / Growth rates of GDP and GFCF, annual averages for periods

| | Gross fixed capital formation | | | | GDP | | | |
|-----------------|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
| Greece | 6.5 | 3.1 | -18.0 | -12.3 | 4.6 | 2.8 | -6.3 | -3.3 |
| Spain | 5.5 | 4.0 | -9.7 | -2.1 | 3.4 | 3.2 | -1.5 | -1.0 |
| Italy | 2.3 | 1.1 | -4.2 | -6.5 | 0.7 | 1.0 | -1.1 | -1.6 |
| Portugal | -3.3 | 0.6 | -7.1 | -6.6 | 0.6 | 1.4 | -1.0 | -1.4 |
| Bulgaria | 13.5 | 17.6 | -13.5 | 1.8 | 5.1 | 6.8 | -0.9 | 1.0 |
| Hungary | 3.9 | 3.4 | -6.4 | 4.5 | 4.1 | 2.9 | -1.4 | 1.3 |
| Poland | -5.3 | 11.2 | 2.1 | 2.2 | 2.3 | 5.2 | 3.8 | 2.0 |
| Romania | 9.5 | 22.0 | -14.0 | -1.0 | 5.4 | 7.2 | -2.3 | 2.4 |
| EU28 | 0.6 | 3.4 | -3.5 | -0.5 | 1.6 | 2.3 | -0.2 | 0.4 |

Source: Eurostat.

¹¹ wiiw Research Report 423, Economic Challenges Lagging Regions III: Recent Investment Trends and Needs, December 2017.

Table 2.2 / Investment by asset types, shares in GDP, period averages; Southern 'lagging' regions countries

| | | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
|-----------------|--------------------------|-----------|-----------|-----------|-----------|
| Greece | Buildings | 14.4 | 13.9 | 9.4 | 6.2 |
| | Intellectual, biological | 1.6 | 1.7 | 1.8 | 1.6 |
| | Transport equipment | 3.6 | 3.7 | 3.2 | 1.5 |
| | Other machinery and ICT | 5.0 | 4.5 | 3.5 | 2.8 |
| | Total GFCF | 24.6 | 23.7 | 17.9 | 12.1 |
| Spain | Buildings | 17.3 | 20.4 | 14.3 | 10.6 |
| | Intellectual, biological | 2.0 | 2.3 | 2.7 | 3.1 |
| | Transport equipment | 2.3 | 2.3 | 1.5 | 1.7 |
| | Other machinery and ICT | 5.1 | 4.9 | 4.4 | 4.3 |
| | Total GFCF | 26.7 | 29.9 | 22.9 | 19.6 |
| Italy | Buildings | 10.4 | 11.4 | 10.6 | 9.0 |
| | Intellectual, biological | 2.6 | 2.5 | 2.6 | 2.7 |
| | Transport equipment | 1.6 | 1.5 | 1.2 | 0.7 |
| | Other machinery and ICT | 6.1 | 5.9 | 5.4 | 4.9 |
| | Total GFCF | 20.7 | 21.3 | 19.9 | 17.4 |
| Portugal | Buildings | 16.1 | 13.7 | 11.6 | 8.0 |
| | Intellectual, biological | 2.0 | 2.3 | 2.9 | 2.9 |
| | Transport equipment | 2.5 | 1.9 | 1.2 | 0.9 |
| | Other machinery and ICT | 5.6 | 4.9 | 4.3 | 3.3 |
| | Total GFCF | 26.2 | 22.9 | 20.0 | 15.2 |
| EU28 | Buildings | 11.0 | 11.9 | 10.7 | 10.0 |
| | Intellectual, biological | 3.4 | 3.4 | 3.6 | 3.8 |
| | Transport equipment | 1.7 | 1.8 | 1.5 | 1.4 |
| | Other machinery and ICT | 5.4 | 4.9 | 4.4 | 4.4 |
| | Total GFCF | 21.5 | 22.0 | 20.3 | 19.5 |

Source: Eurostat.

**Table 2.3 / Contribution of asset types to total investment growth, in %, period averages;
Southern 'lagging' regions countries**

| | | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
|-----------------|--------------------------|-----------|-----------|-----------|-----------|
| Greece | Total GFCF | 6.5 | 3.1 | -18.0 | -12.3 |
| | Buildings | 3.8 | 1.6 | -9.5 | -5.7 |
| | Intellectual, biological | 1.1 | 0.6 | -3.2 | -2.0 |
| | Transport equipment | 0.4 | 0.2 | -1.9 | -1.6 |
| | Other machinery and ICT | 1.1 | 0.7 | -3.3 | -3.0 |
| Spain | Total GFCF | 5.5 | 4.0 | -9.7 | -2.1 |
| | Buildings | 3.7 | 2.6 | -5.7 | -1.1 |
| | Intellectual, biological | 0.4 | 0.3 | -0.7 | -0.2 |
| | Transport equipment | 0.5 | 0.4 | -1.3 | -0.3 |
| | Other machinery and ICT | 0.9 | 0.7 | -2.0 | -0.5 |
| Italy | Total GFCF | 2.3 | 1.1 | -4.2 | -6.5 |
| | Buildings | 1.3 | 0.6 | -2.2 | -3.3 |
| | Intellectual, biological | 0.2 | 0.1 | -0.3 | -0.3 |
| | Transport equipment | 0.3 | 0.1 | -0.6 | -1.1 |
| | Other machinery and ICT | 0.6 | 0.3 | -1.2 | -1.8 |
| Portugal | Total GFCF | -3.3 | 0.6 | -7.1 | -6.6 |
| | Buildings | -2.3 | 0.3 | -4.2 | -3.2 |
| | Intellectual, biological | -0.2 | 0.0 | -0.4 | -0.5 |
| | Transport equipment | -0.3 | 0.1 | -1.2 | -1.3 |
| | Other machinery and ICT | -0.5 | 0.1 | -1.4 | -1.7 |
| EU28 | Total GFCF | 0.6 | 3.4 | -3.5 | -0.5 |
| | Buildings | 0.3 | 1.8 | -1.8 | -0.2 |
| | Intellectual, biological | 0.0 | 0.3 | -0.3 | 0.0 |
| | Transport equipment | 0.1 | 0.5 | -0.6 | -0.1 |
| | Other machinery and ICT | 0.1 | 0.8 | -0.8 | -0.1 |

Source: Eurostat.

**Table 2.4 / Contribution of asset types to total investment growth, in %, period averages;
Eastern 'lagging' regions countries**

| | | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
|-----------------|--------------------------|-----------|-----------|-----------|-----------|
| Bulgaria | Total GFCF | 13.5 | 17.6 | -13.5 | 1.8 |
| | Buildings | 5.4 | 9.5 | -7.0 | 0.9 |
| | Intellectual, biological | 2.8 | 1.5 | -0.6 | 0.1 |
| | Transport equipment | 1.1 | 0.7 | -1.0 | 0.1 |
| | Other machinery and ICT | 4.2 | 5.9 | -4.9 | 0.6 |
| Hungary | Total GFCF | 3.9 | 3.4 | -6.4 | 4.5 |
| | Buildings | 2.1 | 1.7 | -3.0 | 2.1 |
| | Intellectual, biological | 0.4 | 0.3 | -0.5 | 0.5 |
| | Transport equipment | 0.4 | 0.4 | -0.9 | 0.5 |
| | Other machinery and ICT | 1.0 | 1.0 | -2.0 | 1.4 |
| Poland | Total GFCF | -5.3 | 11.2 | 2.1 | 2.2 |
| | Buildings | -3.0 | 5.9 | 1.2 | 1.2 |
| | Intellectual, biological | -0.4 | 1.0 | 0.2 | 0.2 |
| | Transport equipment | -0.4 | 0.7 | 0.1 | 0.1 |
| | Other machinery and ICT | -1.5 | 3.5 | 0.6 | 0.6 |
| Romania | Total GFCF | 9.5 | 22.0 | -14.0 | -2.7 |
| | Buildings | 4.4 | 12.1 | -7.2 | -1.4 |
| | Intellectual, biological | 1.6 | 3.5 | -2.1 | -0.3 |
| | Transport equipment | 0.9 | 1.8 | -1.2 | -0.1 |
| | Other machinery and ICT | 2.5 | 4.5 | -3.4 | -0.9 |
| EU28 | Total GFCF | 0.6 | 3.4 | -3.5 | -0.5 |
| | Buildings | 0.3 | 1.8 | -1.8 | -0.2 |
| | Intellectual, biological | 0.0 | 0.3 | -0.3 | 0.0 |
| | Transport equipment | 0.1 | 0.5 | -0.6 | -0.1 |
| | Other machinery and ICT | 0.1 | 0.8 | -0.8 | -0.1 |

Source: Eurostat.

Table 2.5 / GFCF by economic sectors, in % of GDP, period averages; Southern 'lagging' regions countries

| | | Total | Agriculture | Mining, Energy | Manufacturing Industries | | | | | Construction | Business market services | Other market & public services |
|-----------------|-----------|-------|-------------|----------------|--------------------------|-----------|------------------|-----------------|----------|--------------|--------------------------|--------------------------------|
| | | | | | Total | High tech | Medium high tech | Medium low tech | Low tech | | | |
| Greece | 2000-2003 | 24.6 | 0.9 | 0.6 | 1.5 | 0.1 | 0.2 | 0.6 | 0.6 | 0.5 | 11.3 | 9.8 |
| | 2004-2008 | 23.7 | 0.9 | 0.5 | 1.1 | 0.1 | 0.1 | 0.4 | 0.5 | 0.5 | 12.2 | 8.5 |
| | 2009-2011 | 17.9 | 0.8 | 0.5 | 1.2 | 0.1 | 0.1 | 0.7 | 0.4 | 0.2 | 7.8 | 7.4 |
| | 2012-2014 | 12.1 | 0.6 | 0.4 | 1.2 | 0.1 | 0.1 | 0.7 | 0.3 | 0.1 | 4.5 | 5.3 |
| Spain | 2000-2003 | 26.7 | 0.5 | 1.0 | 2.8 | | | | | 2.7 | 11.0 | 8.9 |
| | 2004-2008 | 29.9 | 0.4 | 1.2 | 2.3 | | | | | 4.0 | 12.8 | 9.2 |
| | 2009-2011 | 22.9 | 0.4 | 2.1 | 1.7 | | | | | 1.3 | 8.9 | 8.5 |
| | 2012-2014 | 19.6 | 0.4 | 2.4 | 1.9 | | | | | 0.8 | 7.4 | 6.4 |
| Italy | 2000-2003 | 20.7 | 0.8 | 1.4 | 3.8 | 0.3 | 1.2 | 1.2 | 1.1 | 0.6 | 7.9 | 6.2 |
| | 2004-2008 | 21.3 | 0.8 | 1.4 | 3.6 | 0.3 | 1.1 | 1.1 | 1.1 | 0.6 | 8.5 | 6.2 |
| | 2009-2011 | 19.9 | 0.7 | 1.2 | 3.5 | 0.3 | 1.1 | 1.0 | 1.0 | 0.5 | 8.1 | 5.9 |
| | 2012-2014 | 17.4 | 0.6 | 1.0 | 3.3 | 0.3 | 1.1 | 1.0 | 0.9 | 0.4 | 7.5 | 4.7 |
| Portugal | 2000-2003 | 26.2 | 0.7 | 1.1 | 3.0 | 0.2 | 0.6 | 0.9 | 1.2 | 1.2 | 11.1 | 9.2 |
| | 2004-2008 | 22.9 | 0.6 | 1.6 | 2.5 | 0.2 | 0.5 | 0.8 | 1.0 | 0.9 | 9.3 | 7.9 |
| | 2009-2011 | 20.0 | 0.5 | 1.9 | 2.5 | 0.2 | 0.6 | 0.8 | 0.9 | 0.7 | 6.9 | 7.6 |
| | 2012-2014 | 15.3 | 0.5 | 1.6 | 2.2 | 0.2 | 0.6 | 0.6 | 0.9 | 0.4 | 5.4 | 5.2 |

Source: Eurostat.

Table 2.6 / GFCF by economic sectors, in % of GDP, period averages; Eastern 'lagging' regions countries

| | | Total | Agriculture | Mining, Energy | Manufacturing industries | | | | | Construction | Business market services | Other market & public services |
|-----------------|-----------|-------|-------------|----------------|--------------------------|-----------|------------------|-----------------|----------|--------------|--------------------------|--------------------------------|
| | | | | | Total | High tech | Medium high tech | Medium low tech | Low tech | | | |
| Bulgaria | 2000-2003 | 18.8 | 1.0 | 1.4 | 3.7 | 0.2 | 0.6 | 1.2 | 1.7 | 2.1 | 2.7 | 7.9 |
| | 2004-2008 | 27.0 | 1.0 | 3.4 | 4.4 | 0.2 | 0.6 | 1.6 | 1.9 | 4.3 | 4.7 | 9.2 |
| | 2009-2011 | 23.8 | 1.0 | 3.7 | 3.0 | 0.1 | 0.5 | 1.2 | 1.1 | 3.6 | 4.6 | 7.9 |
| | 2012-2014 | 21.2 | 1.4 | 4.3 | 3.2 | 0.2 | 0.6 | 1.2 | 1.2 | 2.3 | 3.5 | 6.6 |
| Hungary | 2000-2003 | 24.7 | 1.3 | 1.5 | 5.6 | 1.0 | 2.1 | 1.2 | 1.3 | 0.6 | 8.3 | 7.5 |
| | 2004-2008 | 23.7 | 0.8 | 1.2 | 5.3 | 0.9 | 1.9 | 1.4 | 1.0 | 0.7 | 7.8 | 7.9 |
| | 2009-2011 | 21.0 | 0.9 | 1.3 | 4.9 | 0.9 | 2.1 | 1.1 | 0.9 | 0.4 | 6.4 | 7.1 |
| | 2012-2014 | 20.5 | 0.9 | 1.0 | 6.1 | 0.8 | 3.0 | 1.2 | 1.1 | 0.3 | 4.9 | 7.3 |
| Poland | 2000-2003 | 20.2 | 1.1 | 1.9 | 4.0 | | | | | 0.7 | 6.4 | 6.1 |
| | 2004-2008 | 20.2 | 1.1 | 1.9 | 4.4 | | | | | 0.7 | 5.2 | 6.8 |
| | 2009-2011 | 20.7 | 1.1 | 2.4 | 3.6 | | | | | 0.8 | 4.8 | 8.0 |
| | 2012-2014 | 19.4 | 1.1 | 2.4 | 3.4 | | | | | 0.7 | 4.6 | 7.2 |
| Romania | 2000-2003 | 21.1 | 0.1 | 0.0 | 10.1 | 1.8 | 7.5 | 0.3 | 0.5 | 9.2 | 1.6 | 0.0 |
| | 2004-2008 | 29.5 | 0.1 | 0.0 | 12.8 | 2.2 | 9.2 | 0.7 | 0.7 | 14.5 | 2.1 | 0.0 |
| | 2009-2011 | 26.3 | 0.1 | 0.1 | 9.8 | 1.5 | 7.4 | 0.3 | 0.6 | 13.9 | 2.5 | 0.0 |
| | 2012-2014 | 26.0 | 0.1 | 0.2 | 11.1 | 1.8 | 7.7 | 1.2 | 0.4 | 12.1 | 2.1 | 0.0 |

Source: Eurostat.

Table 2.7 / GFCF by institutional sectors, in % of GDP, period averages

| | | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
|-----------------|-------------|-----------|-----------|-----------|-----------|
| Greece | Enterprises | | 7.2 | 6.2 | 4.7 |
| | Government | | 5.4 | 4.0 | 3.2 |
| | Households | | 11.9 | 7.7 | 4.1 |
| | Total GFCF | 24.6 | 24.5 | 17.9 | 12.1 |
| Spain | Enterprises | 15.0 | 16.6 | 12.7 | 13.9 |
| | Government | 3.9 | 4.3 | 4.5 | 2.3 |
| | Households | 7.8 | 9.0 | 5.8 | 3.4 |
| | Total GFCF | 26.7 | 29.9 | 22.9 | 19.6 |
| Italy | Enterprises | 10.9 | 10.8 | 9.7 | 8.9 |
| | Government | 2.8 | 3.0 | 3.0 | 2.4 |
| | Households | 7.0 | 7.5 | 7.1 | 6.1 |
| | Total GFCF | 20.7 | 21.3 | 19.9 | 17.4 |
| Portugal | Enterprises | 13.3 | 12.9 | 11.3 | 9.6 |
| | Government | 4.7 | 3.8 | 4.3 | 2.2 |
| | Households | 8.3 | 6.2 | 4.5 | 3.3 |
| | Total GFCF | 26.2 | 22.9 | 20.0 | 15.2 |
| Bulgaria | Enterprises | 14.6 | 21.5 | 17.2 | 16.5 |
| | Government | 3.6 | 4.4 | 4.4 | 3.8 |
| | Households | 0.5 | 1.1 | 2.2 | 1.0 |
| | Total GFCF | 18.8 | 27.0 | 23.8 | 21.3 |
| Hungary | Enterprises | 14.7 | 14.2 | 13.4 | 13.0 |
| | Government | 4.1 | 4.1 | 3.5 | 4.6 |
| | Households | 5.9 | 5.3 | 4.1 | 2.9 |
| | Total GFCF | 24.7 | 23.7 | 21.0 | 20.5 |
| Poland | Enterprises | 12.8 | 11.3 | 10.3 | 10.3 |
| | Government | 2.6 | 3.9 | 5.5 | 4.4 |
| | Households | 4.9 | 4.9 | 4.8 | 4.7 |
| | Total GFCF | 20.2 | 20.2 | 20.7 | 19.4 |
| Romania | Enterprises | 16.3 | 22.6 | 15.9 | 15.5 |
| | Government | 3.3 | 5.4 | 5.9 | 4.5 |
| | Households | 1.4 | 1.5 | 4.5 | 5.4 |
| | Total GFCF | 21.1 | 29.5 | 26.3 | 25.4 |
| EU28 | Enterprises | 11.9 | 12.3 | 11.4 | 11.5 |
| | Government | 3.0 | 3.1 | 3.4 | 2.9 |
| | Households | 6.2 | 6.5 | 5.5 | 5.1 |
| | Total GFCF | 21.1 | 22.0 | 20.3 | 19.5 |

Source: Eurostat.

Table 2.8 / Contribution of institutional sectors to total GFCF growth, in %, period averages

| | | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
|-----------------|-------------|-----------|-----------|-----------|-----------|
| Greece | Enterprises | | 1.2 | -6.9 | -5.1 |
| | Government | | 0.9 | -2.9 | -4.1 |
| | Households | | 1.6 | -8.2 | -3.1 |
| | Total GFCF | | 3.7 | -18.0 | -12.3 |
| Spain | Enterprises | 3.0 | 2.2 | -5.8 | -1.6 |
| | Government | 0.8 | 0.6 | -1.7 | -0.2 |
| | Households | 1.7 | 1.1 | -2.2 | -0.3 |
| | Total GFCF | 5.5 | 4.0 | -9.7 | -2.1 |
| Italy | Enterprises | 1.2 | 0.5 | -2.2 | -3.3 |
| | Government | 0.3 | 0.2 | -0.6 | -0.9 |
| | Households | 0.8 | 0.4 | -1.5 | -2.3 |
| | Total GFCF | 2.3 | 1.1 | -4.2 | -6.5 |
| Portugal | Enterprises | -1.7 | 0.3 | -4.2 | -4.4 |
| | Government | -0.6 | 0.1 | -1.4 | -0.9 |
| | Households | -1.0 | 0.1 | -1.6 | -1.4 |
| | Total GFCF | -3.3 | 0.6 | -7.1 | -6.6 |
| Bulgaria | Enterprises | 10.9 | 13.7 | -10.2 | 0.8 |
| | Government | 2.2 | 3.0 | -2.2 | 0.2 |
| | Households | 0.3 | 0.9 | -1.1 | 0.1 |
| | Total GFCF | 13.5 | 17.6 | -13.5 | 1.0 |
| Hungary | Enterprises | 2.2 | 2.2 | -4.3 | 2.7 |
| | Government | 0.6 | 0.5 | -1.1 | 1.1 |
| | Households | 1.0 | 0.8 | -1.0 | 0.6 |
| | Total GFCF | 3.9 | 3.4 | -6.4 | 4.5 |
| Poland | Enterprises | -3.0 | 6.2 | 1.0 | 1.2 |
| | Government | -0.8 | 2.4 | 0.6 | 0.5 |
| | Households | -1.5 | 2.5 | 0.5 | 0.5 |
| | Total GFCF | -5.3 | 11.2 | 2.1 | 2.2 |
| Romania | Enterprises | 7.5 | 16.1 | -8.3 | -0.6 |
| | Government | 1.6 | 4.6 | -2.8 | -0.2 |
| | Households | 0.4 | 1.3 | -2.8 | -0.2 |
| | Total GFCF | 9.5 | 22.0 | -14.0 | -1.0 |
| EU28 | Enterprises | 0.9 | 1.9 | -2.0 | -0.3 |
| | Government | 0.2 | 0.5 | -0.6 | -0.1 |
| | Households | 0.5 | 1.0 | -0.9 | -0.1 |
| | Total GFCF | 1.6 | 3.4 | -3.5 | -0.5 |

Source: Eurostat.

2.2. REGIONAL INVESTMENT TABLES

Table 2.9 / Shares of total and sector GFCF in regional GDP in %, period averages, population weighted averages of regions; Southern 'lagging' regions countries

| | Country | 2000-2003 | | | 2004-2008 | | | 2009-2012 | | |
|----------|-------------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|
| | | Lagging regions | Other regions | Country | Lagging regions | Other regions | Country | Lagging regions | Other regions | |
| Greece | Agriculture | 1.0 | 1.7 | 0.2 | 0.8 | 1.5 | 0.1 | 0.5 | 1.0 | 0.1 |
| | Industry | 2.9 | 3.4 | 2.4 | 1.4 | 1.7 | 1.1 | 0.3 | 0.4 | 0.3 |
| | Services | 20.7 | 26.0 | 15.1 | 21.5 | 25.1 | 18.0 | 15.7 | 18.2 | 13.2 |
| | Total GFCF | 24.6 | 31.2 | 17.7 | 23.7 | 28.3 | 19.3 | 16.6 | 19.6 | 13.6 |
| Spain | Agriculture | 0.5 | 1.0 | 0.4 | 0.4 | 0.8 | 0.3 | 0.2 | 0.4 | 0.2 |
| | Industry | 4.9 | 4.0 | 5.1 | 4.8 | 4.6 | 4.8 | 2.7 | 2.5 | 2.8 |
| | Services | 21.3 | 22.0 | 21.2 | 24.8 | 28.9 | 23.9 | 19.3 | 23.8 | 18.4 |
| | Total GFCF | 26.7 | 27.0 | 26.7 | 29.9 | 34.3 | 29.1 | 22.2 | 26.6 | 21.4 |
| Italy | Agriculture | 0.8 | 1.0 | 0.8 | 0.7 | 0.9 | 0.7 | 0.7 | 0.8 | 0.7 |
| | Industry | 6.4 | 6.0 | 6.5 | 6.4 | 6.1 | 6.5 | 5.5 | 5.0 | 5.6 |
| | Services | 13.5 | 15.0 | 13.0 | 14.1 | 15.1 | 13.7 | 13.3 | 13.9 | 13.1 |
| | Total GFCF | 20.7 | 22.0 | 20.3 | 21.2 | 22.2 | 20.9 | 19.5 | 19.7 | 19.4 |
| Portugal | Agriculture | 0.7 | 1.0 | 0.3 | 0.6 | 0.8 | 0.3 | 0.5 | 0.6 | 0.3 |
| | Industry | 5.5 | 6.6 | 4.0 | 4.7 | 5.8 | 3.3 | 3.4 | 4.4 | 2.2 |
| | Services | 20.1 | 17.6 | 24.0 | 17.6 | 16.7 | 19.6 | 15.1 | 14.6 | 16.9 |
| | Total GFCF | 26.2 | 25.2 | 28.3 | 22.9 | 23.3 | 23.1 | 19.0 | 19.7 | 19.4 |
| EU28 | Agriculture | 0.6 | | | 0.5 | | | 0.5 | | |
| | Industry | 4.6 | | | 4.3 | | | 3.7 | | |
| | Services | 16.3 | | | 17.1 | | | 16.0 | | |
| | Total GFCF | 21.5 | | | 21.9 | | | 20.2 | | |

Source: Cambridge Econometric, Eurostat, own calculations.

Table 2.10 / Shares of total and sector GFCF in regional GDP in %, period averages, population weighted averages of regions; Eastern 'lagging' regions countries

| | Country | 2000-2003 | | | 2004-2008 | | | 2009-2012 | | |
|----------|-------------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|
| | | Lagging regions | Other regions | Country | Lagging regions | Other regions | Country | Lagging regions | Other regions | |
| Bulgaria | Agriculture | 0.1 | 0.2 | 0.0 | 0.6 | 1.0 | 0.2 | 1.3 | 2.5 | 0.1 |
| | Industry | 15.0 | 11.4 | 21.2 | 15.5 | 14.2 | 17.1 | 7.4 | 10.0 | 4.2 |
| | Services | 3.6 | 4.4 | 2.3 | 10.9 | 8.1 | 14.2 | 14.5 | 8.2 | 21.1 |
| | Total GFCF | 18.8 | 16.0 | 23.6 | 27.0 | 23.3 | 31.5 | 23.2 | 20.7 | 25.4 |
| Hungary | Agriculture | 1.4 | 2.5 | 1.0 | 0.8 | 1.6 | 0.6 | 0.8 | 1.6 | 0.6 |
| | Industry | 7.9 | 8.7 | 8.5 | 7.5 | 8.6 | 8.1 | 6.4 | 7.6 | 7.3 |
| | Services | 15.4 | 14.7 | 15.4 | 15.4 | 16.8 | 14.5 | 13.4 | 16.1 | 12.6 |
| | Total GFCF | 24.7 | 25.8 | 24.8 | 23.7 | 27.0 | 23.2 | 20.6 | 25.3 | 20.4 |
| Poland | Agriculture | 1.0 | 1.6 | 1.0 | 1.2 | 2.1 | 1.1 | 1.4 | 2.6 | 1.2 |
| | Industry | 6.5 | 5.6 | 6.7 | 6.6 | 6.2 | 6.9 | 6.7 | 6.1 | 7.0 |
| | Services | 12.7 | 9.6 | 12.6 | 12.4 | 11.1 | 12.3 | 12.4 | 10.9 | 12.6 |
| | Total GFCF | 20.2 | 16.7 | 20.2 | 20.2 | 19.4 | 20.3 | 20.5 | 19.7 | 20.8 |
| Romania | Agriculture | 1.5 | 1.5 | 1.6 | 1.1 | 1.2 | 1.3 | 0.8 | 0.8 | 1.3 |
| | Industry | 10.9 | 10.7 | 11.1 | 16.7 | 14.7 | 18.9 | 15.0 | 11.9 | 18.9 |
| | Services | 8.6 | 5.1 | 14.1 | 11.7 | 9.0 | 14.8 | 10.7 | 9.8 | 11.6 |
| | Total GFCF | 21.1 | 17.4 | 26.8 | 29.5 | 24.9 | 35.0 | 26.6 | 22.4 | 31.8 |
| EU28 | Agriculture | 0.6 | | | 0.5 | | | 0.5 | | |
| | Industry | 4.6 | | | 4.3 | | | 3.7 | | |
| | Services | 16.3 | | | 17.1 | | | 16.0 | | |
| | Total GFCF | 21.5 | | | 21.9 | | | 20.2 | | |

Source: Cambridge Econometric, Eurostat, own calculations.

Table 2.11 / Share of regions in total country investment, total and by sectors, in %, period averages, population weighted averages over regions Southern 'lagging' regions countries

| | | 2000-2003 | | 2004-2008 | | 2009-2012 | |
|-----------------|-------------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| | | Lagging regions | Other regions | Lagging regions | Other regions | Lagging regions | Other regions |
| Greece | Agriculture | 91.1 | 8.9 | 91.3 | 8.7 | 93.3 | 6.7 |
| | Industry | 60.9 | 39.1 | 60.2 | 39.8 | 57.7 | 42.3 |
| | Services | 64.4 | 35.6 | 57.2 | 42.8 | 56.0 | 44.0 |
| | Total GFCF | 64.9 | 35.1 | 58.5 | 41.5 | 57.2 | 42.8 |
| | <i>GDP</i> | 51.0 | 49.0 | 49.0 | 51.0 | 48.1 | 51.9 |
| Spain | Agriculture | 38.2 | 61.8 | 39.4 | 60.6 | 40.0 | 60.0 |
| | Industry | 17.4 | 82.6 | 20.9 | 79.1 | 19.5 | 80.5 |
| | Services | 21.6 | 78.4 | 25.1 | 74.9 | 26.4 | 73.6 |
| | Total GFCF | 21.2 | 78.8 | 24.6 | 75.4 | 25.7 | 74.3 |
| | <i>GDP</i> | 21.0 | 79.0 | 21.5 | 78.5 | 21.4 | 78.6 |
| Italy | Agriculture | 29.3 | 70.7 | 29.1 | 70.9 | 27.8 | 72.2 |
| | Industry | 23.1 | 76.9 | 22.8 | 77.2 | 21.6 | 78.4 |
| | Services | 26.7 | 73.3 | 25.5 | 74.5 | 24.4 | 75.6 |
| | Total GFCF | 25.7 | 74.3 | 24.8 | 75.2 | 23.7 | 76.3 |
| | <i>GDP</i> | 24.2 | 75.8 | 23.8 | 76.2 | 23.4 | 76.6 |
| Portugal | Agriculture | 87.9 | 12.1 | 83.2 | 16.8 | 78.9 | 21.1 |
| | Industry | 70.4 | 29.6 | 72.2 | 27.8 | 74.8 | 25.2 |
| | Services | 52.1 | 47.9 | 55.4 | 44.6 | 56.4 | 43.6 |
| | Total GFCF | 56.9 | 43.1 | 59.6 | 40.4 | 60.3 | 39.7 |
| | <i>GDP</i> | 58.8 | 41.2 | 58.0 | 42.0 | 57.9 | 42.1 |

Source: Cambridge Econometric, Eurostat, own calculations.

Table 2.12 / Share of regions in total country investment, total and by sectors, in %, period averages, population weighted averages over regions; Eastern 'lagging' regions countries

| | | 2000-2003 | | 2004-2008 | | 2009-2012 | |
|-----------------|-------------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|
| | | Lagging regions | Other regions | Lagging regions | Other regions | Lagging regions | Other regions |
| Bulgaria | Agriculture | 88.2 | 11.8 | 87.3 | 12.7 | 96.9 | 3.1 |
| | Industry | 47.0 | 53.0 | 52.7 | 47.3 | 75.1 | 24.9 |
| | Services | 76.5 | 23.5 | 45.9 | 54.1 | 30.5 | 69.5 |
| | Total GFCF | 52.8 | 47.2 | 49.7 | 50.3 | 47.9 | 52.1 |
| | <i>GDP</i> | 62.4 | 37.6 | 56.9 | 43.1 | 52.3 | 47.7 |
| Hungary | Agriculture | 63.0 | 37.0 | 64.4 | 35.6 | 64.6 | 35.4 |
| | Industry | 38.3 | 61.7 | 37.9 | 62.1 | 37.9 | 62.1 |
| | Services | 33.5 | 66.5 | 36.3 | 63.7 | 38.4 | 61.6 |
| | Total GFCF | 36.7 | 63.3 | 37.8 | 62.2 | 39.3 | 60.7 |
| | <i>GDP</i> | 35.2 | 64.8 | 33.3 | 66.7 | 32.0 | 68.0 |
| Poland | Agriculture | 24.9 | 75.1 | 27.9 | 72.1 | 29.5 | 70.5 |
| | Industry | 13.9 | 86.1 | 14.8 | 85.2 | 14.1 | 85.9 |
| | Services | 12.4 | 87.6 | 14.1 | 85.9 | 13.4 | 86.6 |
| | Total GFCF | 13.5 | 86.5 | 15.1 | 84.9 | 14.7 | 85.3 |
| | <i>GDP</i> | 16.1 | 83.9 | 15.7 | 84.3 | 15.3 | 84.7 |
| Romania | Agriculture | 68.6 | 31.4 | 68.3 | 31.7 | 58.0 | 42.0 |
| | Industry | 67.1 | 32.9 | 60.5 | 39.5 | 50.8 | 49.2 |
| | Services | 41.8 | 58.2 | 52.0 | 48.0 | 58.9 | 41.1 |
| | Total GFCF | 56.7 | 43.3 | 57.1 | 42.9 | 54.4 | 45.6 |
| | <i>GDP</i> | 68.9 | 31.1 | 66.2 | 33.8 | 63.9 | 36.1 |

Source: Cambridge Econometric, Eurostat, own calculations.

Table 2.13 / Growth of GDP and GFCF (total and by sectors) in %, period averages, population weighted averages over regions; Southern 'lagging' regions countries

| | | 2000-2003 | | | 2004-2008 | | | 2009-2012 | | |
|-----------------|-------------|-----------|-----------------|---------------|-----------|-----------------|---------------|-----------|-----------------|---------------|
| | | Country | Lagging regions | Other regions | Country | Lagging regions | Other regions | Country | Lagging regions | Other regions |
| Greece | GDP | 4.6 | 4.3 | 5.0 | 2.8 | 1.9 | 3.8 | -6.6 | -6.6 | -6.6 |
| | Total GFCF | 6.5 | 3.7 | 10.7 | 3.1 | 2.0 | 4.5 | -19.4 | -20.4 | -19.4 |
| | Agriculture | 4.7 | 1.9 | 1.3 | -4.1 | -0.7 | -5.6 | -15.4 | -16.3 | -24.2 |
| | Industry | -7.4 | -4.9 | -8.8 | -15.7 | -18.9 | -13.4 | -34.3 | -37.1 | -33.6 |
| | Services | 8.7 | 5.1 | 13.6 | 4.8 | 4.1 | 5.7 | -19.1 | -20.4 | -19.0 |
| Spain | GDP | 3.4 | 4.1 | 3.1 | 3.2 | 3.4 | 3.1 | -1.8 | -2.1 | -1.8 |
| | Total GFCF | 5.5 | 7.5 | 5.1 | 4.0 | 7.1 | 3.1 | -9.1 | -8.9 | -9.2 |
| | Agriculture | 0.3 | 1.9 | -0.3 | -6.1 | -5.7 | -6.4 | -13.6 | -13.3 | -14.4 |
| | Industry | 0.3 | 0.8 | 0.6 | 1.8 | 5.0 | 1.8 | -16.4 | -18.2 | -16.4 |
| | Services | 6.8 | 9.0 | 6.5 | 4.6 | 7.9 | 3.6 | -7.9 | -7.8 | -7.9 |
| Italy | GDP | 0.7 | 0.4 | 0.8 | 1.0 | 0.5 | 1.1 | -1.5 | -1.8 | -1.5 |
| | Total GFCF | 2.3 | 1.6 | 2.3 | 1.1 | 0.1 | 1.1 | -5.5 | -6.7 | -5.5 |
| | Agriculture | 1.2 | 2.0 | 0.9 | -1.5 | -3.4 | -1.2 | -2.3 | -2.3 | -2.5 |
| | Industry | 0.8 | 1.8 | 0.6 | 1.2 | 0.6 | 1.3 | -7.8 | -9.9 | -7.6 |
| | Services | 3.0 | 1.5 | 3.1 | 1.2 | 0.0 | 0.9 | -4.7 | -5.7 | -4.9 |
| Portugal | GDP | 0.6 | 0.3 | 1.2 | 1.4 | 1.1 | 1.7 | -1.8 | -1.4 | -2.2 |
| | Total GFCF | -3.3 | -0.9 | -6.3 | 0.6 | 1.2 | -0.7 | -9.6 | -9.3 | -11.0 |
| | Agriculture | -0.2 | 0.9 | 4.5 | -1.7 | -4.9 | 10.2 | -6.7 | -9.1 | -3.2 |
| | Industry | -10.7 | -12.7 | -5.7 | 1.9 | 3.6 | -3.4 | -13.2 | -14.0 | -14.7 |
| | Services | -1.3 | 4.2 | -6.5 | 0.3 | 0.5 | -0.4 | -8.8 | -8.1 | -10.6 |

Source: Cambridge Econometric, Eurostat, own calculations.

Table 2.14 / Growth of GDP and GFCF (total and by sectors) in %, period averages, population weighted averages over regions; Eastern 'lagging' regions countries

| | | 2000-2003 | | | 2004-2008 | | | 2009-2012 | | |
|-----------------|-------------|-----------|-----------------|---------------|-----------|-----------------|---------------|-----------|-----------------|---------------|
| | | Country | Lagging regions | Other regions | Country | Lagging regions | Other regions | Country | Lagging regions | Other regions |
| Bulgaria | GDP | 5.1 | 3.0 | 9.0 | 6.8 | 4.1 | 10.3 | -0.6 | -1.3 | 0.1 |
| | Total GFCF | 13.5 | 12.8 | 15.9 | 17.6 | 15.6 | 19.5 | -9.9 | -10.6 | -10.1 |
| | Agriculture | 55.8 | 65.7 | 59.4 | 44.3 | 48.1 | 25.5 | 11.8 | 12.3 | -26.2 |
| | Industry | 8.5 | 8.9 | 11.7 | 6.0 | 14.8 | -0.6 | -22.9 | -19.8 | -36.5 |
| | Services | 35.4 | 32.1 | 60.2 | 37.0 | 19.7 | 60.1 | -3.6 | -5.8 | -2.4 |
| Hungary | GDP | 4.1 | 3.2 | 4.3 | 2.9 | 1.4 | 3.3 | -1.5 | -1.7 | -1.4 |
| | Total GFCF | 3.9 | 7.6 | 1.8 | 3.4 | 2.3 | 4.1 | -5.9 | -4.2 | -7.1 |
| | Agriculture | 14.9 | 18.8 | 6.6 | -7.3 | -7.8 | -4.5 | -0.1 | -0.5 | 0.1 |
| | Industry | -0.4 | 0.6 | -0.4 | 3.0 | 1.9 | 3.4 | -5.7 | -4.2 | -9.1 |
| | Services | 5.4 | 10.1 | 3.9 | 4.4 | 4.8 | 4.7 | -6.4 | -4.8 | -6.6 |
| Poland | GDP | 2.3 | 2.8 | 2.2 | 5.2 | 4.6 | 5.3 | 3.2 | 2.3 | 3.2 |
| | Total GFCF | -5.3 | 1.8 | -4.7 | 11.2 | 10.8 | 11.6 | 1.1 | 0.2 | 1.2 |
| | Agriculture | -4.1 | 2.9 | -5.2 | 13.0 | 15.0 | 12.7 | 7.9 | 8.2 | 6.5 |
| | Industry | -1.7 | 0.6 | -2.2 | 10.2 | 10.1 | 10.2 | 0.5 | -2.8 | 0.3 |
| | Services | -7.2 | 2.8 | -5.8 | 11.5 | 10.7 | 12.1 | 0.8 | -0.3 | 1.0 |
| Romania | GDP | 5.4 | 5.8 | 5.3 | 7.2 | 5.4 | 9.8 | -1.6 | -1.6 | -1.8 |
| | Total GFCF | 9.5 | 19.0 | 7.7 | 22.0 | 18.3 | 24.9 | -10.7 | -10.2 | -10.8 |
| | Agriculture | -0.6 | 1.4 | -4.5 | 10.8 | 6.6 | 23.7 | -14.4 | -16.8 | -11.7 |
| | Industry | 8.9 | 30.2 | -9.1 | 25.6 | 16.9 | 40.6 | -14.4 | -16.2 | -13.4 |
| | Services | 11.9 | 11.8 | 28.7 | 18.3 | 23.7 | 11.2 | -5.0 | -2.1 | -6.7 |

Source: Cambridge Econometric, Eurostat, own calculations.

2.3. ERDF AND COHESION FUND INVESTMENT TABLES

Table 2.15 / Aggregation scheme

| Aggregated groups | Broad topics | 2000-2006 Priorities | 2007-2013 Priorities |
|------------------------------|-----------------------------------|--------------------------------|--|
| Productive investment | RTD | 18 | 01, 02, 03, 04, 07, 09 |
| | Business support | 11, 14, 15, 16, 0.5*12, 0.5*13 | 05, 06, 08, 63 |
| | Human resources | 21, 22, 23, 24, 25 | 62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80 |
| Infrastructure | Transport Infrastructure | 31, (1/14)*13 | 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 52 |
| | IT Infrastructure and services | 32 | 10, 11, 12, 13, 14, 15 |
| | Energy | 33 | 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43 |
| | Social Infrastructure | 36 | 75, 76, 77, 78, 79 |
| Environment | Environment and natural resources | 34, 0.5*12, (4/14) *13 | 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56 |
| | Tourism and Culture | 17, (2/14)*13 | 57, 58, 59, 60 |
| | Urban and rural regeneration | 35 | 61 |
| Other | Technical Assistance | 41 | 85, 86, 81 |
| | Outermost regions assistance | | 82, 83, 84 |

Source: own grouping based on DG Regio (2015), 'Geography of Expenditure' Final Report, Work Package 13 - Ex post evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF).

Table 2.16 / ERDF/CF expenditures 2007-2013, per capita and in % of GDP (period average), population weighted averages over regions, Southern 'lagging' regions countries

| | | Country total | | Lagging regions | | Other regions | |
|-----------------|-----------------------|----------------|-------------|-----------------|-------------|---------------|-------------|
| | | Per capita | As % of GDP | Per capita | As % of GDP | Per capita | As % of GDP |
| Greece | Environment | 222.2 | 1.2 | 286.2 | 1.9 | 129.7 | 0.5 |
| | Infrastructure | 680.0 | 3.5 | 981.0 | 6.6 | 244.6 | 1.0 |
| | Productive investment | 279.8 | 1.5 | 324.7 | 2.2 | 214.7 | 0.8 |
| | Other | 41.6 | 0.2 | 63.4 | 0.4 | 10.1 | 0.0 |
| | TOTAL | 1,223.6 | 6.3 | 1,655.3 | 11.1 | 599.0 | 2.3 |
| Spain | Environment | 120.0 | 0.5 | 223.4 | 1.3 | 80.1 | 0.3 |
| | Infrastructure | 237.3 | 1.0 | 471.6 | 2.7 | 146.9 | 0.6 |
| | Productive investment | 125.1 | 0.5 | 203.5 | 1.2 | 94.9 | 0.4 |
| | Other | 8.8 | 0.0 | 4.9 | 0.0 | 10.3 | 0.0 |
| | TOTAL | 491.1 | 2.1 | 903.3 | 5.1 | 332.1 | 1.3 |
| Italy | Environment | 54.1 | 0.2 | 133.1 | 0.7 | 12.0 | 0.0 |
| | Infrastructure | 96.5 | 0.4 | 255.0 | 1.4 | 12.0 | 0.0 |
| | Productive investment | 89.1 | 0.3 | 210.4 | 1.2 | 24.6 | 0.1 |
| | Other | 8.0 | 0.0 | 20.5 | 0.1 | 1.4 | 0.0 |
| | TOTAL | 247.8 | 0.9 | 619.0 | 3.4 | 50.1 | 0.2 |
| Portugal | Environment | 288.4 | 1.7 | 334.2 | 2.4 | 189.0 | 0.9 |
| | Infrastructure | 453.4 | 2.7 | 514.4 | 3.7 | 320.9 | 1.5 |
| | Productive investment | 375.4 | 2.3 | 498.2 | 3.5 | 108.5 | 0.5 |
| | Other | 35.3 | 0.2 | 28.3 | 0.2 | 50.4 | 0.2 |
| | TOTAL | 1,152.5 | 6.9 | 1,375.1 | 9.8 | 668.8 | 3.0 |
| EU28 | Environment | 93.6 | 0.4 | | | | |
| | Infrastructure | 198.5 | 0.8 | | | | |
| | Productive investment | 108.0 | 0.4 | | | | |
| | Other | 11.8 | 0.0 | | | | |
| | TOTAL | 412.0 | 1.6 | | | | |

Source: DG Regio, Eurostat, own calculations.

Table 2.17 / ERDF/CF expenditures 2007-2013, per capita and in % of GDP (period average), population weighted averages over regions, Eastern 'lagging' regions countries

| | | Country total | | Lagging regions | | Other regions | |
|-----------------|-----------------------|----------------|-------------|-----------------|-------------|----------------|-------------|
| | | Per capita | As % of GDP | Per capita | As % of GDP | Per capita | As % of GDP |
| Bulgaria | Environment | 201.1 | 3.8 | 207.8 | 5.4 | 184.2 | 2.1 |
| | Infrastructure | 284.8 | 5.4 | 249.7 | 6.5 | 372.8 | 4.3 |
| | Productive investment | 87.8 | 1.7 | 80.6 | 2.1 | 105.8 | 1.2 |
| | Other | 30.0 | 0.6 | 23.7 | 0.6 | 45.6 | 0.5 |
| | TOTAL | 603.6 | 11.5 | 561.9 | 14.5 | 708.3 | 8.2 |
| Hungary | Environment | 511.8 | 5.1 | 642.2 | 9.8 | 383.4 | 2.8 |
| | Infrastructure | 954.0 | 9.4 | 1,048.7 | 16.0 | 860.8 | 6.3 |
| | Productive investment | 307.9 | 3.0 | 346.1 | 5.3 | 270.3 | 2.0 |
| | Other | 63.9 | 0.6 | 69.9 | 1.1 | 58.1 | 0.4 |
| | TOTAL | 1,837.5 | 18.2 | 2,106.8 | 32.2 | 1,572.6 | 11.6 |
| Poland | Environment | 191.7 | 2.0 | 198.1 | 2.9 | 189.9 | 1.8 |
| | Infrastructure | 709.9 | 7.4 | 878.9 | 12.8 | 663.9 | 6.5 |
| | Productive investment | 230.3 | 2.4 | 261.5 | 3.8 | 221.8 | 2.2 |
| | Other | 32.2 | 0.3 | 28.0 | 0.4 | 33.4 | 0.3 |
| | TOTAL | 1,164.1 | 12.2 | 1,366.5 | 19.9 | 1,109.1 | 10.8 |
| Romania | Environment | 106.7 | 1.6 | 112.8 | 2.1 | 82.0 | 0.7 |
| | Infrastructure | 189.2 | 2.9 | 154.5 | 2.9 | 329.5 | 2.7 |
| | Productive investment | 59.2 | 0.9 | 49.2 | 0.9 | 99.5 | 0.8 |
| | Other | 20.8 | 0.3 | 12.0 | 0.2 | 56.4 | 0.5 |
| | TOTAL | 375.9 | 5.7 | 328.5 | 6.2 | 567.4 | 4.7 |
| EU28 | Environment | 93.6 | 0.4 | | | | |
| | Infrastructure | 198.5 | 0.8 | | | | |
| | Productive investment | 108.0 | 0.4 | | | | |
| | Other | 11.8 | 0.0 | | | | |
| | TOTAL | 412.0 | 1.6 | | | | |

Source: DG Regio, Eurostat, own calculations.

Table 2.18 / Total country ERDF/CF expenditures 2000-2006 and 2007-2013, in mio. € and shares in total EU expenditures

| | 2000-2006 | | 2007-2013 | | Difference | |
|-------------|-----------------------------|------------------------------------|-----------------------------|------------------------------------|-----------------------------|------------------------------------|
| | Expenditures (in mio. €) | Shares on total EU expenditures | Expenditures (in mio. €) | Shares on total EU expenditures | Expenditures (in mio. €) | Shares on total EU expenditures |
| EL | 16,642.8 | 11.5 | 12,835.8 | 6.3 | -3,807.0 | -5.2 |
| ES | 39,804.8 | 27.4 | 22,759.6 | 11.2 | -17,045.1 | -16.2 |
| IT | 18,306.2 | 12.6 | 14,844.6 | 7.3 | -3,461.6 | -5.3 |
| PT | 16,289.2 | 11.2 | 12,126.7 | 6.0 | -4,162.5 | -5.3 |
| BG | 0.0 | 0.0 | 4,494.4 | 2.2 | 4,494.4 | 2.2 |
| HU | 2,450.1 | 1.7 | 18,321.1 | 9.0 | 15,871.0 | 7.3 |
| PL | 9,853.6 | 6.8 | 44,666.5 | 22.0 | 34,812.9 | 15.2 |
| RO | 0.0 | 0.0 | 7,618.2 | 3.7 | 7,618.2 | 3.7 |
| EU28 | 145,036.2 | 100.0 | 203,161.6 | 100.0 | 58,125.5 | 0.0 |

Source: DG Regio, own calculations.

Table 2.19 / Change in spending structure 2000-2006 to 2007-2013

| | | Productive investment | Environment | Infrastructure | Other |
|-----------------|-----------------|--------------------------|--------------|----------------|------------|
| Greece | Lagging regions | 7.7 | -7.1 | -1.2 | 0.6 |
| | Other regions | 25.0 | 0.9 | -25.4 | -0.5 |
| | TOTAL | 10.5 | -5.9 | -5.2 | 0.6 |
| Spain | Lagging regions | -0.1 | -22.0 | 21.8 | 0.3 |
| | Other regions | 14.3 | -13.0 | -4.2 | 3.0 |
| | TOTAL | 4.9 | -17.3 | 10.8 | 1.6 |
| Italy | Lagging regions | -0.5 | -7.5 | 7.3 | 0.8 |
| | Other regions | 12.9 | -17.9 | 5.4 | -0.5 |
| | TOTAL | -0.9 | -9.2 | 9.2 | 0.8 |
| Portugal | Lagging regions | 8.7 | -3.4 | -6.7 | 1.5 |
| | Other regions | -9.2 | 10.6 | -5.1 | 3.7 |
| | TOTAL | 6.3 | -1.0 | -7.4 | 2.0 |
| Bulgaria | Lagging regions | . | . | . | . |
| | Other regions | . | . | . | . |
| | TOTAL | . | . | . | . |
| Hungary | Lagging regions | 2.0 | -9.0 | 3.7 | 3.3 |
| | Other regions | -1.9 | -11.9 | 14.0 | -0.2 |
| | TOTAL | 0.4 | -9.3 | 7.9 | 0.9 |
| Poland | Lagging regions | 5.2 | -14.3 | 8.8 | 0.3 |
| | Other regions | 8.2 | -18.4 | 9.1 | 1.0 |
| | TOTAL | 8.1 | -17.1 | 8.2 | 0.9 |
| Romania | Lagging regions | . | . | . | . |
| | Other regions | . | . | . | . |
| | TOTAL | . | . | . | . |
| EU28 | TOTAL | -1.5 | -9.8 | 10.0 | 1.3 |

Source: DG Regio, Eurostat, own calculations.

Table 2.20 / Change in ERDF/CF expenditures 2000-2006 to 2007-2013, per capita (in €) and in % of GDP, Southern 'lagging' regions countries

| | | Country | | Lagging Regions | | Other regions | |
|-----------------|-----------------------|---------------|-------------|-----------------|-------------|---------------|-------------|
| | | Per capita | As % of GDP | Per capita | As % of GDP | Per capita | As % of GDP |
| Greece | Environment | -174.0 | -1.3 | -168.9 | -1.5 | -181.7 | -1.0 |
| | Infrastructure | -300.0 | -2.5 | -35.1 | -1.2 | -683.3 | -3.5 |
| | Productive investment | 92.1 | 0.3 | 107.7 | 0.5 | 69.5 | 0.1 |
| | Other | -0.1 | 0.0 | 13.8 | 0.0 | -20.3 | -0.1 |
| | TOTAL | -382.0 | -3.5 | -82.5 | -2.2 | -815.9 | -4.4 |
| Spain | Environment | -272.8 | -1.5 | -349.9 | -2.6 | -243.4 | -1.2 |
| | Infrastructure | -115.9 | -0.8 | 83.0 | 0.0 | -192.6 | -1.0 |
| | Productive investment | -69.0 | -0.5 | -84.7 | -0.8 | -63.1 | -0.4 |
| | Other | 6.9 | 0.0 | 2.0 | 0.0 | 8.8 | 0.0 |
| | TOTAL | -450.7 | -2.8 | -349.6 | -3.4 | -490.4 | -2.6 |
| Italy | Environment | -44.5 | -0.2 | -94.0 | -0.7 | -15.0 | -0.1 |
| | Infrastructure | 1.9 | 0.0 | 10.5 | -0.1 | 0.9 | 0.0 |
| | Productive investment | -28.1 | -0.2 | -65.9 | -0.5 | -4.2 | 0.0 |
| | Other | 0.4 | 0.0 | 2.3 | 0.0 | -0.4 | 0.0 |
| | TOTAL | -70.3 | -0.4 | -147.1 | -1.3 | -18.7 | -0.1 |
| Portugal | Environment | -117.4 | -1.1 | -131.2 | -1.5 | -82.0 | -0.6 |
| | Infrastructure | -275.7 | -2.4 | -234.0 | -2.6 | -364.8 | -2.1 |
| | Productive investment | -35.0 | -0.7 | 37.8 | -0.3 | -188.9 | -1.1 |
| | Other | 19.5 | 0.1 | 12.7 | 0.1 | 34.1 | 0.1 |
| | TOTAL | -408.6 | -4.1 | -314.6 | -4.5 | -601.6 | -3.6 |
| EU28 | Environment | -6.8 | -0.1 | -8.5 | -0.6 | -4.9 | -0.1 |
| | Infrastructure | 81.7 | 0.2 | 184.2 | 0.9 | 63.2 | 0.2 |
| | Productive investment | 22.4 | 0.0 | 45.3 | 0.0 | 18.9 | 0.0 |
| | Other | 7.2 | 0.0 | 13.9 | 0.1 | 5.9 | 0.0 |
| | TOTAL | 104.4 | 0.1 | 234.9 | 0.4 | 83.1 | 0.1 |

Source: DG Regio, Eurostat, own calculations.

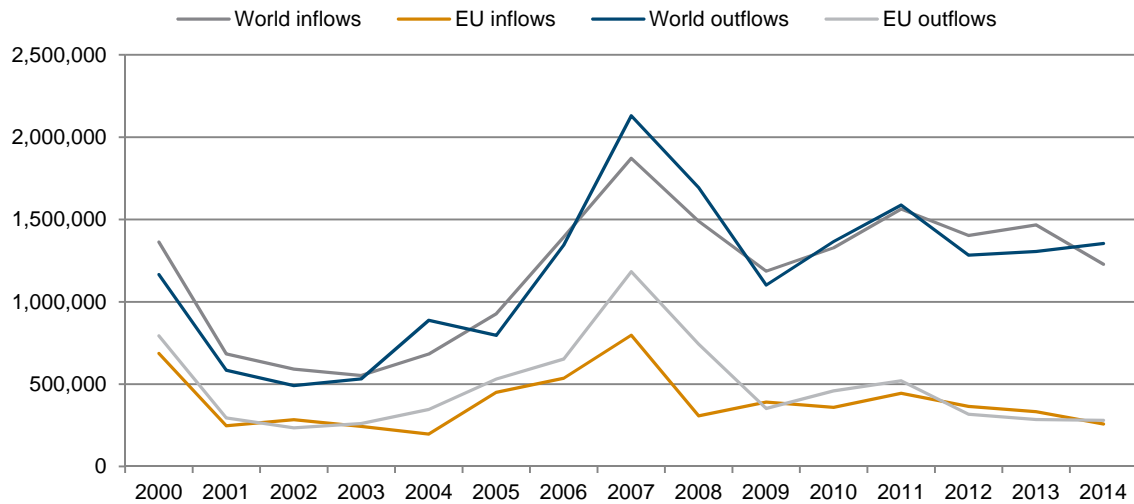
Table 2.21 / Change in ERDF/CF expenditures 2000-2006 to 2007-2013, per capita (in €) and in % of GDP, Eastern 'lagging' regions countries

| | | Country | | Lagging Regions | | Other regions | |
|-----------------|-----------------------|----------------|-------------|-----------------|-------------|----------------|-------------|
| | | Per capita | As % of GDP | Per capita | As % of GDP | Per capita | As % of GDP |
| Bulgaria | Environment | . | . | . | . | . | . |
| | Infrastructure | . | . | . | . | . | . |
| | Productive investment | . | . | . | . | . | . |
| | Other | . | . | . | . | . | . |
| | TOTAL | . | . | . | . | . | . |
| Hungary | Environment | 422.0 | 3.8 | 552.9 | 8.0 | 293.1 | 1.9 |
| | Infrastructure | 847.6 | 8.0 | 945.3 | 13.9 | 751.4 | 5.2 |
| | Productive investment | 268.5 | 2.5 | 312.8 | 4.6 | 224.4 | 1.5 |
| | Other | 57.7 | 0.5 | 69.5 | 1.1 | 45.8 | 0.3 |
| | TOTAL | 1,595.8 | 14.9 | 1,880.6 | 27.6 | 1,314.7 | 8.9 |
| Poland | Environment | 105.1 | 0.5 | 152.3 | 1.8 | 92.2 | 0.2 |
| | Infrastructure | 573.6 | 5.0 | 790.7 | 10.7 | 514.5 | 4.0 |
| | Productive investment | 200.1 | 1.9 | 239.1 | 3.3 | 189.5 | 1.6 |
| | Other | 27.3 | 0.3 | 25.1 | 0.3 | 28.0 | 0.2 |
| | TOTAL | 906.2 | 7.7 | 1,207.3 | 16.1 | 824.1 | 6.1 |
| Romania | Environment | . | . | . | . | . | . |
| | Infrastructure | . | . | . | . | . | . |
| | Productive investment | . | . | . | . | . | . |
| | Other | . | . | . | . | . | . |
| | TOTAL | . | . | . | . | . | . |
| EU28 | Environment | -6.8 | -0.1 | -8.5 | -0.6 | -4.9 | -0.1 |
| | Infrastructure | 81.7 | 0.2 | 184.2 | 0.9 | 63.2 | 0.2 |
| | Productive investment | 22.4 | 0.0 | 45.3 | 0.0 | 18.9 | 0.0 |
| | Other | 7.2 | 0.0 | 13.9 | 0.1 | 5.9 | 0.0 |
| | TOTAL | 104.4 | 0.1 | 234.9 | 0.4 | 83.1 | 0.1 |

Source: DG Regio, Eurostat, own calculations.

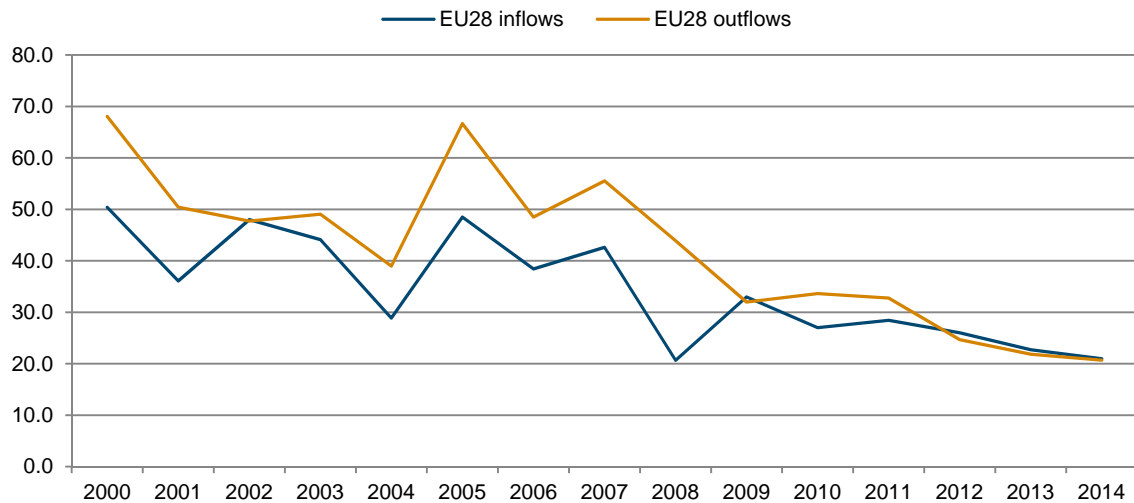
2.4. FOREIGN DIRECT INVESTMENT TABLES

Figure 2.1 / FDI in- and outflows, World and EU, in mio. US\$



Source: UNCTAD, WIR 2015 Annex tables.

Figure 2.2 / EU FDI in- and outflows in % of total World FDI in- and outflows



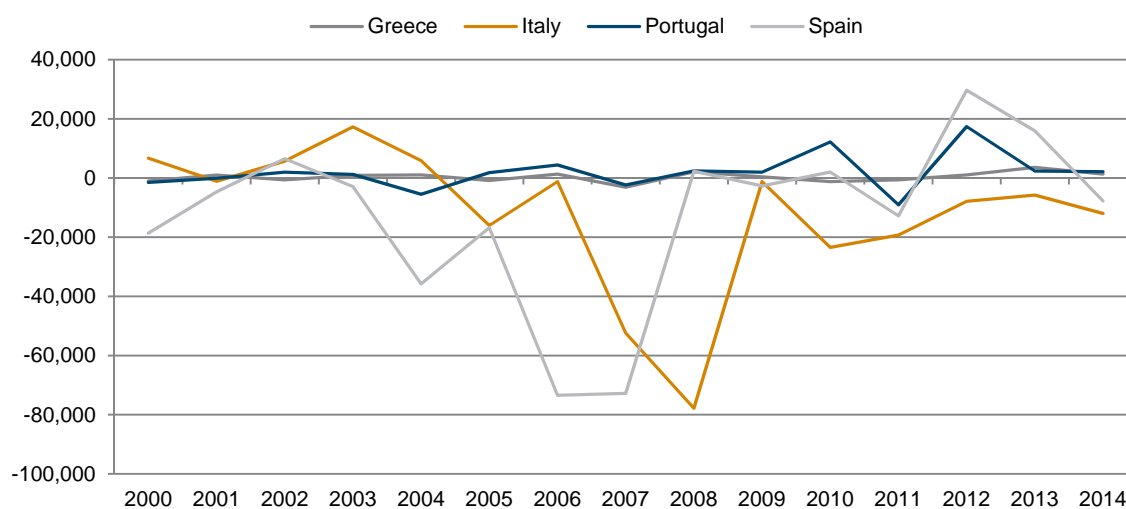
Source: UNCTAD, WIR 2015 Annex tables.

Table 2.22 / Merger & Acquisition inflows (net), in % of total FDI inflows, accumulated over periods

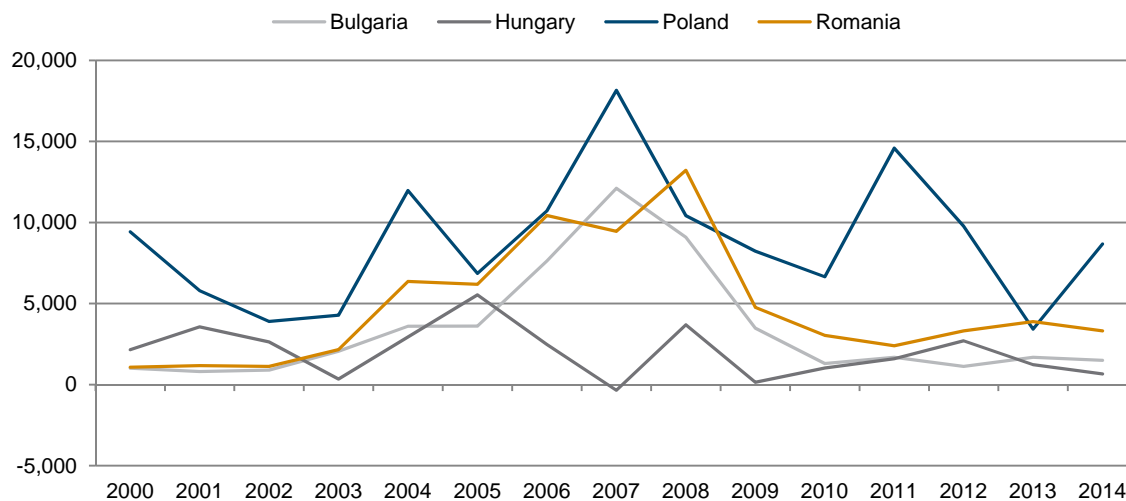
| | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 | 2000-2014 |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| EU28 | 58.9 | 70.7 | 35.4 | 42.9 | 56.1 |
| Greece | 93.7 | 121.4 | 91.1 | 59.0 | 99.3 |
| Italy | 42.3 | 74.8 | 37.4 | 72.1 | 58.6 |
| Portugal | 20.7 | 16.1 | 36.5 | 94.1 | 40.5 |
| Spain | 27.7 | 55.3 | 76.2 | 37.2 | 48.3 |
| Bulgaria | 22.1 | 15.5 | 1.8 | 4.9 | 13.3 |
| Hungary | 19.0 | 30.0 | 36.1 | -6.0 | 18.5 |
| Poland | 55.8 | 5.5 | 27.5 | 10.2 | 19.0 |
| Romania | 24.7 | 22.5 | 5.6 | 3.2 | 17.6 |

Source: UNCTAD, WIR 2015 Annex tables, own calculations.

Figure 2.3 / Net FDI inflows, in mio.US\$, 4 Southern EU lagging regions countries



Source: UNCTAD, WIR 2015 Annex tables.

Figure 2.4 / Net FDI inflows, in mio.US\$, 4 Eastern EU lagging regions countries

Source: UNCTAD, WIR 2015 Annex tables.

Table 2.23 / Net FDI inflows in % of GFCF, period averages

| | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
|-----------------|-----------|-----------|-----------|-----------|
| EU28 | -1.7 | -6.2 | -1.3 | 0.7 |
| Greece | 0.0 | 0.2 | -1.1 | 7.2 |
| Italy | 2.4 | -5.8 | -3.4 | -2.3 |
| Portugal | 1.0 | 0.1 | 2.9 | 21.4 |
| Spain | -3.1 | -10.1 | -1.4 | 4.8 |
| Bulgaria | 38.4 | 68.4 | 16.6 | 12.4 |
| Hungary | 15.5 | 10.2 | 3.4 | 6.0 |
| Poland | 15.0 | 16.4 | 9.9 | 7.2 |
| Romania | 14.0 | 25.3 | 7.5 | 7.7 |

Source: UNCTAD, WIR 2015 Annex tables.

Table 2.24 / Main investment destinations of 'lagging' regions countries, total investment in mio.US\$, country shares in % of total investment abroad

| Spain | | | | Greece | | | |
|-------------------------|-----------------|---------------|-----------------|----------------|----------------|----------------|----------------|
| 2005 | | 2012 | | 2005 | | 2012 | |
| World (mio.US\$) | 305426.6 | World | 636731.4 | World | 13601.9 | World | 44965.2 |
| Luxembourg | 12.1 | UK | 13.9 | Cyprus | 31.2 | Cyprus | 26.0 |
| Argentina | 10.1 | Brazil | 10.6 | Romania | 17.7 | Netherlands | 15.9 |
| UK | 9.5 | Netherlands | 10.1 | United States | 9.0 | Turkey | 10.9 |
| Netherlands | 8.2 | United States | 9.3 | Bulgaria | 6.5 | Romania | 8.2 |
| Mexico | 7.2 | Mexico | 7.5 | Luxembourg | 5.7 | United States | 5.7 |
| France | 6.5 | Portugal | 5.0 | Germany | 2.9 | Bulgaria | 5.7 |
| Portugal | 6.4 | France | 4.5 | Austria | 2.1 | Cayman Islands | 4.9 |
| Brazil | 6.2 | Germany | 3.2 | Spain | 1.2 | Serbia | 4.4 |
| United States | 4.1 | Argentina | 3.0 | Netherlands | 1.1 | Hong Kong | 2.3 |
| Chile | 4.0 | Switzerland | 2.9 | Hong Kong | 0.9 | Egypt | 2.2 |
| Italy | | | | Portugal | | | |
| 2005 | | 2012 | | 2005 | | 2012 | |
| World (mio.US\$) | 244550.7 | World | 526941.0 | World | 40926.5 | World | 59991.5 |
| Netherlands | 22.3 | Netherlands | 19.6 | Netherlands | 23.2 | Netherlands | 43.7 |
| Germany | 11.1 | Germany | 8.7 | Spain | 17.4 | Spain | 12.7 |
| Luxembourg | 10.9 | Spain | 8.5 | Denmark | 13.1 | Angola | 6.9 |
| France | 10.2 | Austria | 6.3 | Brazil | 5.8 | Brazil | 6.5 |
| UK | 8.3 | France | 6.3 | Ireland | 4.2 | Germany | 3.7 |
| United States | 7.3 | United States | 6.1 | Poland | 1.8 | Luxembourg | 3.0 |
| Switzerland | 4.0 | UK | 3.0 | Greece | 1.5 | Poland | 2.0 |
| Spain | 3.6 | Poland | 3.0 | France | 1.4 | Italy | 2.0 |
| Ireland | 2.3 | Belgium | 3.0 | United States | 1.3 | Ireland | 1.9 |
| Belgium | 1.8 | Ireland | 2.8 | Luxembourg | 1.0 | UK | 1.8 |
| Hungary | | | | Poland | | | |
| 2005 | | 2012 | | 2005 | | 2012 | |
| World (mio.US\$) | 8636.5 | World | 37682.3 | World | 3616.1 | World | 30898.8 |
| Slovakia | 31.3 | Curacao | 25.2 | Switzerland | 31.2 | Luxembourg | 21.8 |
| Netherlands | 16.8 | Belgium | 10.8 | Czech Republic | 11.4 | Cyprus | 10.2 |
| South Korea | 9.6 | Croatia | 10.2 | Netherlands | 7.5 | UK | 10.1 |
| Croatia | 7.9 | Cyprus | 9.2 | Sweden | 4.8 | Netherlands | 7.4 |
| Macedonia | 6.0 | Switzerland | 6.1 | Ukraine | 4.7 | Switzerland | 7.2 |
| Romania | 4.7 | Luxembourg | 5.9 | Germany | 4.7 | Belgium | 5.2 |
| Bulgaria | 4.6 | Slovakia | 4.2 | UK | 4.5 | Czech Republic | 4.5 |
| Poland | 2.8 | Israel | 3.8 | Russia | 3.1 | Germany | 4.5 |
| Cyprus | 1.6 | Bulgaria | 3.1 | Luxembourg | 3.0 | Lithuania | 4.3 |
| Czech Republic | 1.5 | Romania | 2.3 | France | 2.5 | United States | 3.5 |

Source: UNCTAD (absolute FDI stock in US\$), Eurostat (destination countries).

FDI stocks

Table 2.25 / FDI inward and outward stock, in % of GDP, period averages

| | FDI inward stock | | | | FDI outward stock | | | |
|-----------------|------------------|-----------|-----------|-----------|-------------------|-----------|-----------|-----------|
| | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
| EU28 | 25.9 | 33.5 | 41.4 | 49.3 | 34.5 | 40.0 | 51.3 | 56.8 |
| Greece | 10.5 | 13.2 | 11.5 | 9.4 | 5.4 | 8.0 | 14.3 | 15.9 |
| Italy | 10.8 | 14.5 | 15.9 | 17.4 | 13.9 | 15.9 | 22.7 | 25.1 |
| Portugal | 33.1 | 40.8 | 46.3 | 51.9 | 17.7 | 24.1 | 26.6 | 26.9 |
| Spain | 32.0 | 36.6 | 42.6 | 52.2 | 23.0 | 32.5 | 43.7 | 48.8 |
| Bulgaria | 24.0 | 65.0 | 93.2 | 90.4 | 0.3 | 1.1 | 3.0 | 3.9 |
| Hungary | 52.6 | 61.9 | 69.2 | 78.3 | 3.7 | 10.6 | 17.6 | 29.1 |
| Poland | 22.6 | 33.5 | 38.3 | 45.8 | 0.2 | 2.3 | 5.2 | 10.5 |
| Romania | 19.1 | 31.0 | 39.8 | 41.6 | 0.3 | 0.5 | 0.8 | 0.5 |

Source: UNCTAD, WIR 2015 Annex tables.

Table 2.26 / Net FDI stock, in % of GDP, period averages

| | 2000-2003 | 2004-2008 | 2009-2011 | 2012-2014 |
|-----------------|-----------|-----------|-----------|-----------|
| EU28 | -8.6 | -6.6 | -9.9 | -7.5 |
| Greece | 5.1 | 5.3 | -2.8 | -6.5 |
| Italy | -3.1 | -1.4 | -6.8 | -7.6 |
| Portugal | 15.4 | 16.7 | 19.6 | 25.0 |
| Spain | 9.0 | 4.1 | -1.0 | 3.3 |
| Bulgaria | 23.7 | 63.8 | 90.2 | 86.4 |
| Hungary | 48.9 | 51.3 | 51.6 | 49.1 |
| Poland | 22.4 | 31.2 | 33.1 | 35.3 |
| Romania | 18.8 | 30.5 | 39.0 | 41.1 |

Source: UNCTAD, WIR 2015 Annex tables.

Table 2.27 / Aggregation scheme for sectoral FDI data

| Aggregated sectors | NACE rev1.1 | | NACE rev2 | |
|----------------------------|--|--|--|--|
| Agriculture | A | Agriculture, hunting and forestry | A | Agriculture, forestry and fishing |
| | B | Fishing | | |
| Mining & Energy | C | Mining and quarrying | B | Mining And Quarrying |
| | E | Electricity, gas and water supply | D | Electricity, gas, steam and air conditioning supply |
| | | | E | Water supply; sewerage, waste management and remediation activities |
| Manufacturing | D | Manufacturing | C | Manufacturing |
| High tech | DL | Manufacture of electrical and optical equipment | C26 | Manufacture of computer, electronic and optical products |
| | DG | Manufacture of chemicals, chemical products and man-made fibres | C20 | Manufacture of chemicals and chemical products |
| Medium high tech | DK | Manufacture of machinery and equipment n.e.c. | C21 | Manufacture of basic pharmaceutical products and pharmaceutical preparations |
| | DM | Manufacture of transport equipment | C28 | Manufacture of machinery and equipment n.e.c. |
| | | | C29 | Manufacture of motor vehicles, trailers and semi-trailers |
| Medium low tech | DF | Manufacture of coke, refined petroleum products and nuclear fuel | C19 | Manufacture of coke and refined petroleum products |
| | DH | Manufacture of rubber and plastic products | C22 | Manufacture of rubber and plastic products |
| | DJ | Manufacture of basic metals and fabricated metal products | C24 | Manufacture of basic metals |
| | | | C25 | Manufacture of fabricated metal products, except machinery and equipment |
| Low tech | DA | Manufacture of food products, beverages and tobacco | C10 | Manufacture of food products |
| | DB | Manufacture of textiles and textile products | C11 | Manufacture of beverages |
| | DD | Manufacture of wood and wood products | C12 | Manufacture of tobacco products |
| | DE | Manufacture of pulp, paper | C13 | Manufacture of textiles |
| | | | C14 | Manufacture of wearing apparel |
| | | | C16 | Manufacture of wood and of products |
| | | | C17 | Manufacture of paper and paper products |
| | | | C18 | Printing and reproduction of recorded media |
| Other | DC | Manufacture of leather and leather products | C15 | Manufacture of leather and related products |
| | DI | Manufacture of other non-metallic mineral products | C23 | Manufacture of other non-metallic mineral products |
| | DN | Manufacturing n.e.c. | C27 | Manufacture of electrical equipment |
| | | | C31 | Manufacture of furniture |
| | | | C32 | Other manufacturing |
| Construction | F | Construction | F | Construction |
| Business Services | J | Financial intermediation | J | Information and communication |
| | K | Real estate, renting and business activities | K | Financial and insurance activities |
| Other Services | | | L | Real estate activities |
| | | | M | Professional, scientific and technical activities |
| | G | Wholesale and retail trade | G | Wholesale and retail trade |
| | H | Hotels and restaurants | H | Transportation and storage |
| | I | Transport, storage and communication | I | Accommodation and food service |
| | L | Public administration and defence; compulsory social security | N | Administrative and support service |
| | M | Education | O | Public administration and defence; |
| | N | Health and social work | P | Education |
| | O | Other community, social services | Q | Human health and social work activities |
| | P | Activities of households | R | Arts, entertainment and recreation |
| Q | Extra-territorial organizations and bodies | S | Other service activities | |
| | | T | Activities of households as employers; | |
| | | U | Activities of extraterritorial organisations | |

Table 2.28 / Inward FDI stocks in manufacturing industry sectors, in % of Total manufacturing FDI (= 100), Southern EU lagging regions countries*

| | Period | High tech | Medium high tech | Medium low tech | Low tech | Other |
|---------------|-----------|-----------|------------------|-----------------|----------|-------|
| Greece | 2000-2003 | 1.4 | 14.2 | 34.7 | 49.7 | 0.0 |
| | 2004-2008 | 0.9 | 12.1 | 38.5 | 38.6 | 9.9 |
| | 2009-2011 | 14.0 | 7.8 | 41.7 | 16.2 | 20.4 |
| | 2012-2014 | 9.4 | 11.2 | 26.2 | 44.6 | 8.5 |
| Spain | 2000-2003 | | | | | |
| | 2004-2008 | 4.4 | 37.3 | 23.9 | 12.3 | 22.1 |
| | 2009-2011 | 5.3 | 25.8 | 27.4 | 16.0 | 25.5 |
| | 2012-2014 | 5.9 | 29.4 | 16.0 | 13.1 | 35.6 |
| Italy | 2000-2003 | 0.0 | 56.7 | 10.1 | 33.3 | 0.0 |
| | 2004-2008 | 1.3 | 50.8 | 17.7 | 18.2 | 12.0 |
| | 2009-2011 | 14.5 | 34.5 | 21.2 | 15.9 | 13.8 |
| | 2012-2014 | 12.5 | 24.7 | 24.0 | 24.7 | 14.2 |
| EU28 | 2000-2003 | 11.2 | 50.3 | 12.9 | 23.6 | 2.1 |
| | 2004-2008 | 8.8 | 43.0 | 16.1 | 20.9 | 11.1 |
| | 2009-2011 | 12.9 | 33.0 | 19.6 | 22.8 | 11.7 |
| | 2012-2014 | 12.3 | 31.3 | 20.6 | 24.4 | 11.4 |

*No data for Portugal.

Source: Eurostat, own calculations.

Table 2.29 / Inward FDI stocks in manufacturing industry sectors, in % of Total manufacturing FDI (= 100), Eastern EU lagging regions countries

| | Period | High tech | Medium high tech | Medium low tech | Low tech | Other |
|-----------------|-----------|-----------|------------------|-----------------|----------|-------|
| Bulgaria | 2000-2003 | 6.2 | 22.3 | 26.8 | 44.8 | 0.0 |
| | 2004-2008 | 3.9 | 16.2 | 36.2 | 30.5 | 13.1 |
| | 2009-2011 | 1.4 | 15.3 | 37.7 | 27.7 | 17.8 |
| | 2012-2014 | 2.8 | 14.8 | 42.5 | 21.2 | 18.7 |
| Hungary | 2000-2003 | 14.6 | 53.1 | 10.6 | 21.7 | 0.0 |
| | 2004-2008 | 12.6 | 41.6 | 16.8 | 16.1 | 12.9 |
| | 2009-2011 | 29.3 | 30.1 | 14.5 | 12.9 | 13.3 |
| | 2012-2014 | 25.1 | 27.6 | 12.1 | 17.5 | 17.8 |
| Poland | 2000-2003 | 4.7 | 37.9 | 14.9 | 42.5 | 0.0 |
| | 2004-2008 | 3.5 | 39.1 | 23.7 | 33.7 | 0.0 |
| | 2009-2011 | 7.2 | 24.4 | 23.1 | 27.7 | 17.6 |
| | 2012-2014 | 6.7 | 28.9 | 18.1 | 28.9 | 17.4 |
| Romania | 2000-2003 | 2.0 | 29.5 | 30.8 | 37.7 | 0.0 |
| | 2004-2008 | 1.3 | 22.3 | 32.1 | 29.5 | 14.8 |
| | 2009-2011 | 5.6 | 22.9 | 30.6 | 23.9 | 17.0 |
| | 2012-2014 | | | | | |
| EU28 | 2000-2003 | 11.2 | 50.3 | 12.9 | 23.6 | 2.1 |
| | 2004-2008 | 8.8 | 43.0 | 16.1 | 20.9 | 11.1 |
| | 2009-2011 | 12.9 | 33.0 | 19.6 | 22.8 | 11.7 |
| | 2012-2014 | 12.3 | 31.3 | 20.6 | 24.4 | 11.4 |

Source: Eurostat, own calculations.

2.5. REGIONAL FDI

Table 2.30 / Number of greenfield FDI projects 2003-2015, by type of regions

| | | 2003-2006 | 2007-2015 |
|-----------------|-----------------|--------------|--------------|
| Greece | Other regions | 72 | 137 |
| | Lagging regions | 47 | 37 |
| | Not allocated | 40 | 103 |
| | Total | 159 | 277 |
| Spain | Other regions | 714 | 2,324 |
| | Lagging regions | 110 | 404 |
| | Not allocated | 161 | 734 |
| | Total | 985 | 3,462 |
| Italy | Other regions | 423 | 927 |
| | Lagging regions | 43 | 83 |
| | Not allocated | 86 | 389 |
| | Total | 552 | 1,399 |
| Portugal | Other regions | 82 | 191 |
| | Lagging regions | 86 | 135 |
| | Not allocated | 69 | 125 |
| | Total | 237 | 451 |
| Bulgaria | Other regions | 228 | 321 |
| | Lagging regions | 256 | 289 |
| | Not allocated | 137 | 230 |
| | Total | 621 | 840 |
| Hungary | Other regions | 556 | 654 |
| | Lagging regions | 182 | 253 |
| | Not allocated | 138 | 237 |
| | Total | 876 | 1,144 |
| Poland | Other regions | 788 | 1,850 |
| | Lagging regions | 55 | 141 |
| | Not allocated | 178 | 553 |
| | Total | 1,021 | 2,544 |
| Romania | Other regions | 344 | 718 |
| | Lagging regions | 364 | 768 |
| | Not allocated | 230 | 566 |
| | Total | 938 | 2,052 |

Source: fdimarkets.com database, own calculations.

Table 2.31 / Inward greenfield FDI projects in manufacturing, Southern 'lagging' regions countries; FDI projects per 100thsd.inhabitants*

| | | Other regions | | Lagging regions | |
|-----------------|----------------------------|---------------|------------|-----------------|------------|
| | | 2000-2006 | 2007-2013 | 2000-2006 | 2007-2013 |
| Greece | High tech | 0.0 | 0.0 | 0.0 | 0.0 |
| | Medium high tech | 0.0 | 0.0 | 0.0 | 0.0 |
| | Medium low tech | 0.0 | 0.0 | 0.0 | 0.0 |
| | Low tech | 0.0 | 0.0 | 0.1 | 0.0 |
| | Total Manufacturing | 0.1 | 0.0 | 0.1 | 0.0 |
| Spain | High tech | 0.1 | 0.1 | 0.1 | 0.1 |
| | Medium high tech | 0.3 | 0.4 | 0.1 | 0.2 |
| | Medium low tech | 0.1 | 0.1 | 0.1 | 0.0 |
| | Low tech | 0.1 | 0.2 | 0.1 | 0.3 |
| | Total Manufacturing | 0.6 | 0.8 | 0.3 | 0.6 |
| Italy | High tech | 0.0 | 0.0 | 0.0 | 0.0 |
| | Medium high tech | 0.1 | 0.1 | 0.0 | 0.0 |
| | Medium low tech | 0.0 | 0.0 | 0.0 | 0.0 |
| | Low tech | 0.0 | 0.0 | 0.0 | 0.0 |
| | Total Manufacturing | 0.1 | 0.2 | 0.1 | 0.1 |
| Portugal | High tech | 0.0 | 0.0 | 0.1 | 0.1 |
| | Medium high tech | 0.2 | 0.2 | 0.2 | 0.2 |
| | Medium low tech | 0.0 | 0.1 | 0.1 | 0.1 |
| | Low tech | 0.1 | 0.1 | 0.1 | 0.1 |
| | Total Manufacturing | 0.3 | 0.3 | 0.4 | 0.5 |

*average population of regions in the respective period.

Source: fdimarkets.com database, own calculations.

Table 2.32 / Inward greenfield FDI projects in manufacturing, Eastern 'lagging' regions countries; FDI projects per 100thsd.inhabitants*

| | | Other regions | | Lagging regions | |
|-----------------|----------------------------|---------------|------------|-----------------|------------|
| | | 2000-2006 | 2007-2013 | 2000-2006 | 2007-2013 |
| Bulgaria | High tech | 0.3 | 0.2 | 0.2 | 0.2 |
| | Medium high tech | 0.4 | 0.5 | 0.3 | 0.7 |
| | Medium low tech | 0.1 | 0.3 | 0.4 | 0.4 |
| | Low tech | 0.7 | 0.7 | 1.0 | 0.6 |
| | Total Manufacturing | 1.6 | 1.6 | 1.9 | 1.8 |
| Hungary | High tech | 0.7 | 0.7 | 0.3 | 0.6 |
| | Medium high tech | 1.6 | 2.1 | 0.6 | 1.4 |
| | Medium low tech | 0.7 | 0.6 | 0.3 | 0.5 |
| | Low tech | 1.0 | 1.0 | 0.9 | 0.8 |
| | Total Manufacturing | 4.1 | 4.4 | 2.0 | 3.3 |
| Poland | High tech | 0.2 | 0.2 | 0.1 | 0.1 |
| | Medium high tech | 0.5 | 0.6 | 0.1 | 0.3 |
| | Medium low tech | 0.2 | 0.3 | 0.1 | 0.1 |
| | Low tech | 0.4 | 0.5 | 0.1 | 0.2 |
| | Total Manufacturing | 1.2 | 1.6 | 0.4 | 0.6 |
| Romania | High tech | 0.2 | 0.3 | 0.1 | 0.2 |
| | Medium high tech | 0.9 | 0.7 | 0.3 | 0.6 |
| | Medium low tech | 0.2 | 0.1 | 0.1 | 0.2 |
| | Low tech | 0.6 | 0.6 | 0.4 | 0.6 |
| | Total Manufacturing | 1.8 | 1.7 | 0.9 | 1.6 |

*average population of regions in the respective period.

Source: fdimarkets.com database, own calculations.

Table 2.33 / Inward greenfield FDI projects in services, Southern 'lagging' regions countries; FDI projects per 100thsd.inhabitants*

| | | Other regions | | Lagging regions | |
|----------|-----------------------|---------------|------------|-----------------|------------|
| | | 2000-2006 | 2007-2013 | 2000-2006 | 2007-2013 |
| Greece | Advanced services | 0.4 | 1.0 | 0.2 | 0.2 |
| | Other services | 1.1 | 2.0 | 0.4 | 0.3 |
| | R&D & ICT | 0.0 | 0.0 | 0.0 | 0.0 |
| | Total Services | 1.6 | 3.0 | 0.6 | 0.4 |
| Spain | Advanced services | 0.4 | 1.7 | 0.1 | 0.5 |
| | Other services | 1.1 | 3.9 | 0.5 | 1.6 |
| | R&D & ICT | 0.1 | 0.2 | 0.0 | 0.1 |
| | Total Services | 1.6 | 5.8 | 0.6 | 2.2 |
| Italy | Advanced services | 0.2 | 0.6 | 0.0 | 0.0 |
| | Other services | 0.6 | 1.4 | 0.1 | 0.2 |
| | R&D & ICT | 0.0 | 0.1 | 0.0 | 0.0 |
| | Total Services | 0.9 | 2.0 | 0.1 | 0.2 |
| Portugal | Advanced services | 0.6 | 1.3 | 0.1 | 0.3 |
| | Other services | 1.3 | 3.5 | 0.5 | 0.8 |
| | R&D & ICT | 0.0 | 0.1 | 0.1 | 0.0 |
| | Total Services | 2.0 | 4.9 | 0.6 | 1.1 |

*average population of regions in the respective period.

Source: fdimarkets.com database, own calculations.

Table 2.34 / Inward greenfield FDI projects in services, Eastern 'lagging' regions countries; FDI projects per 100thsd.inhabitants*

| | | Other regions | | Lagging regions | |
|----------|-----------------------|---------------|-------------|-----------------|------------|
| | | 2000-2006 | 2007-2013 | 2000-2006 | 2007-2013 |
| Bulgaria | Advanced services | 1.3 | 3.0 | 0.1 | 0.5 |
| | Other services | 5.2 | 8.4 | 1.5 | 2.3 |
| | R&D & ICT | 0.3 | 0.2 | 0.0 | 0.0 |
| | Total Services | 6.8 | 11.6 | 1.7 | 2.8 |
| Hungary | Advanced services | 1.3 | 2.0 | 0.2 | 0.3 |
| | Other services | 4.2 | 5.3 | 1.1 | 1.2 |
| | R&D & ICT | 0.4 | 0.4 | 0.1 | 0.0 |
| | Total Services | 5.8 | 7.7 | 1.3 | 1.5 |
| Poland | Advanced services | 0.2 | 1.1 | 0.0 | 0.2 |
| | Other services | 0.9 | 2.7 | 0.2 | 0.6 |
| | R&D & ICT | 0.1 | 0.1 | 0.0 | 0.0 |
| | Total Services | 1.2 | 3.8 | 0.2 | 0.8 |
| Romania | Advanced services | 1.5 | 4.1 | 0.2 | 0.8 |
| | Other services | 3.4 | 9.2 | 0.8 | 1.9 |
| | R&D & ICT | 0.2 | 0.3 | 0.0 | 0.0 |
| | Total Services | 5.0 | 13.6 | 1.0 | 2.6 |

*average population of regions in the respective period.

Source: fdimarkets.com database, own calculations.

Table 2.35 / Net greenfield FDI projects by broad sectors, Southern 'lagging' regions countries; FDI projects per 100thsd.inhabitants*

| | | Other regions | | Lagging regions | |
|-----------------|-----------------|---------------|-------------|-----------------|-------------|
| | | 2000-2006 | 2007-2013 | 2000-2006 | 2007-2013 |
| Greece | Services | -0.7 | -1.4 | 0.4 | 0.2 |
| | Manufacturing | -0.8 | -0.8 | -0.1 | -0.2 |
| | Construction | -0.2 | -0.2 | 0.0 | 0.0 |
| | Mining & energy | 0.0 | -0.1 | 0.0 | 0.0 |
| | Total | -1.6 | -2.6 | 0.4 | 0.1 |
| Spain | Services | -0.1 | -2.8 | 0.4 | 1.0 |
| | Manufacturing | 0.1 | -0.6 | 0.2 | 0.1 |
| | Construction | -0.2 | -0.7 | 0.0 | 0.1 |
| | Mining & energy | -0.1 | -0.5 | 0.0 | 0.1 |
| | Total | -0.4 | -4.6 | 0.7 | 1.3 |
| Italy | Services | -0.9 | -2.6 | 0.0 | -0.1 |
| | Manufacturing | -0.7 | -1.5 | 0.0 | 0.0 |
| | Construction | 0.0 | 0.0 | 0.0 | 0.0 |
| | Mining & energy | 0.0 | -0.2 | 0.0 | 0.0 |
| | Total | -1.6 | -4.3 | 0.1 | 0.0 |
| Portugal | Services | 1.0 | 0.2 | 0.4 | -1.4 |
| | Manufacturing | 0.0 | -1.2 | 0.1 | 0.0 |
| | Construction | 0.2 | 0.3 | -0.3 | -0.1 |
| | Mining & energy | -0.1 | -0.8 | 0.0 | 0.0 |
| | Total | 1.1 | -1.4 | 0.3 | -1.4 |

*average population of regions in the respective period.

Source: fdimarkets.com database, own calculations.

Table 2.36 / Net greenfield FDI projects by broad sectors, Southern 'lagging' regions countries; FDI projects per 100thsd.inhabitants*

| | | Other regions | | Lagging regions | |
|-----------------|-----------------|---------------|-------------|-----------------|------------|
| | | 2000-2006 | 2007-2013 | 2000-2006 | 2007-2013 |
| Bulgaria | Services | 6.4 | 10.2 | 1.5 | 2.6 |
| | Manufacturing | 1.4 | 1.4 | 1.8 | 1.7 |
| | Construction | 2.3 | 1.5 | 0.6 | 0.4 |
| | Mining & energy | 0.2 | 0.3 | 0.3 | 0.4 |
| | Total | 10.2 | 13.3 | 4.3 | 5.1 |
| Hungary | Services | 5.0 | 5.7 | 1.3 | 1.5 |
| | Manufacturing | 3.9 | 3.9 | 2.0 | 3.2 |
| | Construction | 1.1 | 0.3 | 0.1 | 0.2 |
| | Mining & energy | 0.0 | 0.0 | 0.1 | 0.1 |
| | Total | 10.0 | 9.9 | 3.5 | 5.0 |
| Poland | Services | 1.0 | 3.0 | 0.2 | 0.7 |
| | Manufacturing | 1.1 | 1.5 | 0.3 | 0.5 |
| | Construction | 0.2 | 0.6 | 0.0 | 0.2 |
| | Mining & energy | 0.0 | 0.0 | 0.0 | 0.0 |
| | Total | 2.3 | 5.2 | 0.6 | 1.4 |
| Romania | Services | 4.6 | 11.8 | 1.0 | 2.5 |
| | Manufacturing | 1.8 | 1.6 | 0.9 | 1.6 |
| | Construction | 1.4 | 2.3 | 0.1 | 0.4 |
| | Mining & energy | 0.0 | 0.1 | 0.0 | 0.1 |
| | Total | 7.8 | 15.9 | 2.0 | 4.5 |

*average population of regions in the respective period.

Source: fdimarkets.com database, own calculations.

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