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How do EU-15 Member States Benefit from the Cohesion Policy in the V4?

Annex 1. Methodology of macroeconomic and microeconomic analysis

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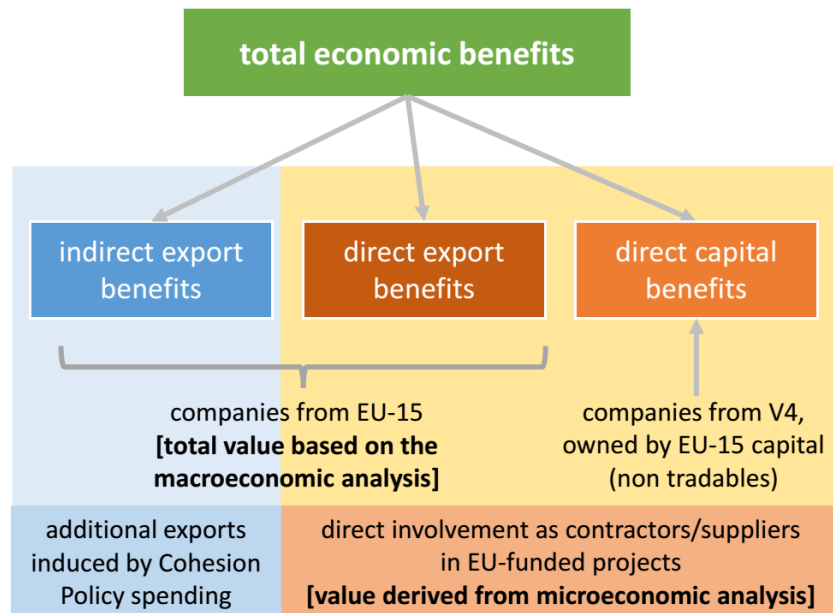
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1 Introduction

This annex includes a detailed description of the analytic approach applied to calculate the value of economic benefits to the EU-15 broken down into three categories: indirect export benefits, direct export benefits and direct capital benefits.



2 Macroeconomic analysis

2.1 General research concept for estimating macroeconomic benefits

The goal of the macroeconomic part of this evaluation was to calculate the volume of additional exports of the EU-15 countries, which occur due to the implementation of Cohesion Policy in the Visegrad Group countries. This approach enabled us to estimate the value of both indirect and direct export benefits.

- The basis of the macroeconomic analysis was a combination of a micro- and macroeconomic perspective. The starting point was to use results of the microeconomic survey of beneficiaries of cohesion policy in Visegrad Group countries (see Section 3). By extrapolating these results from the sample to the entire population of beneficiaries it was possible to derive the structure of the intervention within the scope of cohesion policy in all Visegrad Group countries. This, in turn, in combination with macroeconomic data (concerning, amongst others, international trade and national accounts) and simulations of the EUImactMOD macroeconomic model, made it possible to quantify the benefits obtained by the EU-15 countries as a result of the implementation of cohesion policy in all Visegrad Group countries.
- At the conceptual level, the estimation of macroeconomic effects consists in a most detailed quantification of the dependencies between the inflow of EU funds to the Visegrad Group countries and an increase of imports to these countries from the EU-15. The methodology applied in this evaluation assumed a distinction between various components of imports: goods reaching final consumers (consumption imports), goods increasing the capital stock of enterprises (investment imports) and goods being intermediate stages in the process of producing other goods and services (production imports). The key tool enabling the estimation of the additional stream of imports from the EU-15 countries to the Visegrad Group countries comprises the input-output tables available from public statistical sources.

- The approach applied in this evaluation allowed to maintain comparability previous evaluations commissioned by the Ministry of Regional Development and prepared by Institute for Structural Research in 2009 and 2011. It is worth noting that the evaluation was based on similar (although much extended and updated¹) information/data sources – both in regard to the microeconomic component (survey of beneficiaries of the 2007-2013 financial perspective programmes) and the macroeconomic component (simulations of the macroeconomic impact of the 2007-2013 financial perspective).
- The basic scope of this evaluation covers the 2007-2013 period, i.e. the assessment of the impact of operating programmes of the 2007-2013 financial perspective. In practice, the assessment of the impact of these programmes does not end at the year 2013, but it must also cover subsequent years as funds are still spent in 2015 according to the n+2 principle; in addition, taken into account should be the long-term influence of the interventions, which – according to the results of macroeconomic simulations² – go to at least 2020-2025.
- The evaluation also covered the forecast of the impact of the ESIF funds intervention in the 2014-2020 financial perspective analogically to the 2007-2013 perspective. Hence, it also includes an impact assessment up to 2025. Both in the macroeconomic part and microeconomic part of the forecast relied on the data and empirical material derived from the 2007-2013 programming period. This dataset was augmented by all available information concerning the ESIF intervention structure in 2014-2020, in particular the financial structure of all operational programmes.

Frame 1. Glossary of terms used in the macroeconomic analysis

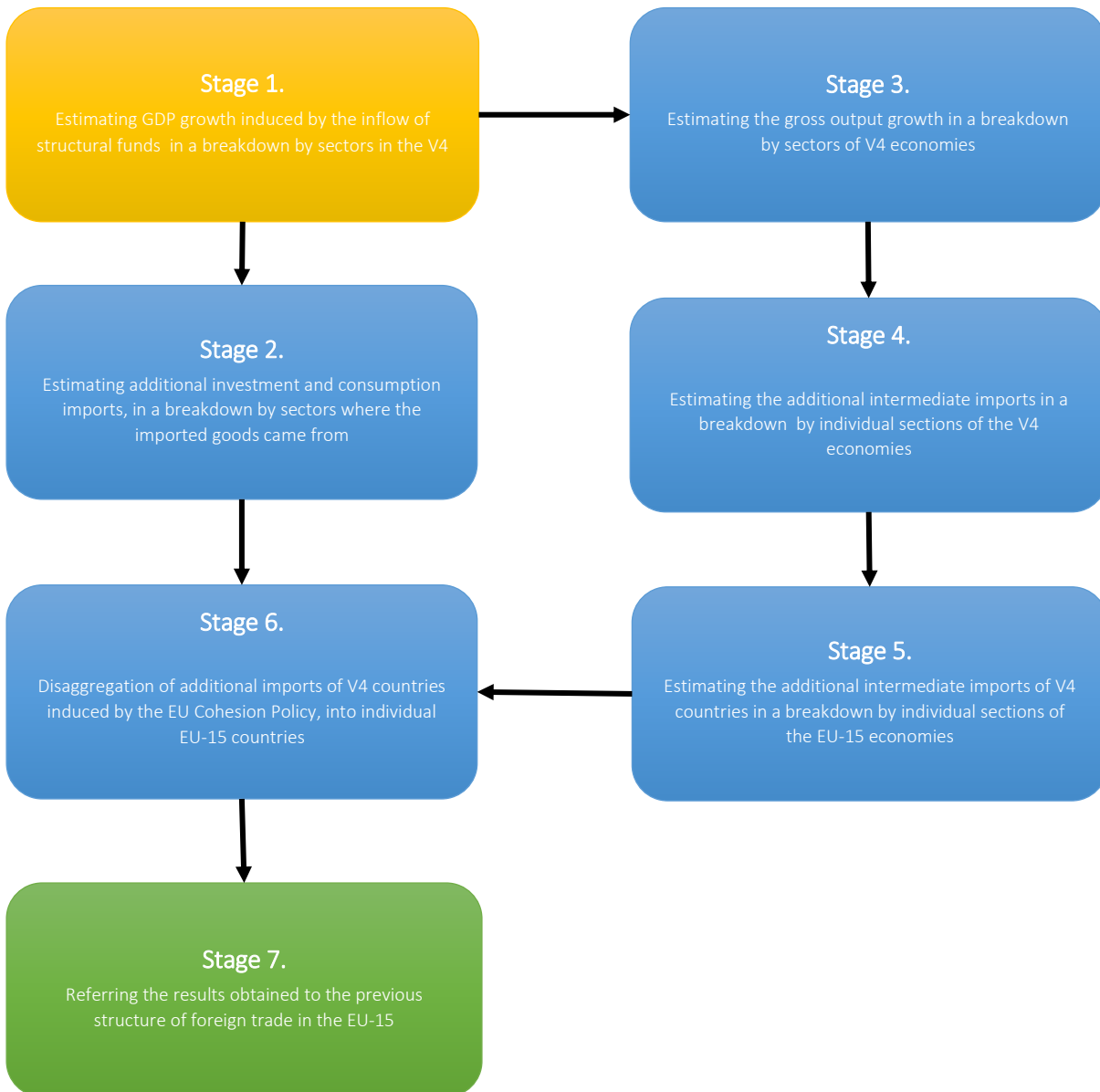
Term	definitione
gross sector output	Total value of goods or services produced by a given sector in a given year, regardless of its further destination. Gross output is divided into intermediate consumption (consumption of materials necessary for production in individual sections) and final consumption, i.e. consumption, investment and exports.
final sector output	Gross sector output minus intermediate consumption. The final output is divided into consumption, investment in fixed capital, changes in inventories, and exports. In national accounts, the accumulated final output of all sections of the economy (including the final imported goods) is the same as the country's GDP (the sum of the value added of all domestic products produced in a given year) plus total imports.
imports of intermediate goods	Imports of goods and services to be used (utilised) in the production process in individual sections of the national economy.
consumer imports	Imports of goods and services for consumption (including the government)
investment imports	Imports of goods and services used in fixed capital investment.
sector import intensity	The percentage of intermediate imports in the gross output of a given sector.

¹ Among others, in 2015 it was possible to survey a larger population (larger number) of supported projects; in addition most projects covered in the 2011 evaluation have already been completed.

² see e.g. *Ocena wpływu realizacji polityki spójności na kształtowanie się wybranych wskaźników makroekonomicznych na poziomie krajowym i regionalnym. Symulacje modelu EUImpactMOD IV*, elaboration by IBS commissioned by the Ministry of Regional Development, Warsaw 2014 r

Term	definitione
value added of the section	Total profits and compensation of employees of all companies in the section. using the balance equation, the total output in a section requires incurring costs equal to total intermediate costs (taking into account the cost of imported goods and services), consumption of fixed assets and wages. The remainder of the gross output is the profit of companies.

Chart 1. Relation of the stages of the macroeconomic analysis.



Source: Own elaboration.

Box 2. Characteristics of the EUImpactMOD V4 model

The economic analysis “*Evaluation of benefits to the EU-15 countries resulting from the implementation of cohesion policy in the Visegrad Group countries*”, which was commissioned by the Ministry of Regional Development was conducted with the use of the EUImpactMOD V4 developed by the Institute for Structural Research.

The EUImpactMOD V4 model is a modern, structural, macroeconomic model built in the framework of the DSGE (*Dynamic Stochastic General Equilibrium*) methodology. The main agents which are present in the model are the household, firms, government and foreign sector. All agents optimize an objective function (firms maximize profits, the household maximizes utility from consumption), while taking into account their budget constraints. All agents interact with each other on several levels, for example household members offer their work to firms on the labour market and purchase consumption goods from firms. Firms produce consumption, investment, public and export goods using several production factors: labour, capital, energy and intermediate materials that they purchase from other sectors. The government is in charge of collecting direct taxes from both firms (CIT) and households (PIT, social security contributions), as well as indirect taxes (VAT, excise taxes). Government revenue is spent on the purchase of public goods, public investment as well as on transfers to the household, such as pensions and benefits. Further additional attributes of the model which are relevant for the study are:

- it takes account of the presence of the European Union and the support granted in the form of structural funds;
- it is a multi-sector model, calibrated to the latest available input output matrix, which makes it possible to study the influence of EU funds on individual sectors of the economy and the interactions between sectors;
- it includes the government sector, whose actions (including making decisions concerning the allocation of European funds) affect the state of the economy;
- funds from the European Union are divided into three categories: enterprise support, basic infrastructure development and development of human resources, which makes it possible to separately examine the influence of each of them on the economy.

Great care was taken to model the economic nature of the relationship between the Visegrad countries and the EU. In particular the model includes the exact accounting of the flow of money between the two economic areas and the three distinct categories of aid are modelled, each in a way which represents their true impact on the economy. Enterprise support is modelled within the equation governing the capital accumulation of firms, investment in public capital increases the public infrastructure which has a positive effect on the productivity of firms, whereas the development of human resources increases human capital and the productivity of labour, thereby increasing the probability of finding a job, reducing unemployment etc.

The EUImpactMOD V4 model is an open economy model, with the domestic counterpart being one of the Visegrad countries, and the foreign counterpart equivalent to the remaining member states of the European Union. The foreign area is symmetric with respect to the domestic one, i.e. it is modelled using the same mathematical structures and has the same types of agents, segments and markets. The differences in the two economies result from a different calibration and parametrization regarding the relative size of the economies, volumes of individual sectors, investments, consumption etc. Such a model consisting of two economic areas was constructed for each of the Visegrad countries.

Source: Own elaboration

2.2 Step-by-step analysis³

Stage 1. <i>Estimating GDP growth induced by the inflow of structural funds in a breakdown by sectors in the V4</i>	
data sources	methods of data analysis
<ul style="list-style-type: none"> data on EU-funded programmes in V4 countries in the financial perspective 2007-2013 and assumptions on 2014-2020 programmes simulated impact of cohesion policy on the economies of Visegrad Group countries in the financial perspective 2007-2013 and a forecast for the 2014-2020 financial perspective (EUImpactMOD V4) historical data (national accounts of V4 countries) together with a forecast by IBS/imapp of key macroeconomic indicators results of CAWI questionnaire and a microeconomic forecast 	<ul style="list-style-type: none"> Estimated impact of structural funds in V4 countries, obtained using the EUImpactMOD model (calibrated to each of the four economies), was quantified as the percentage deviation from the level of output that would have been earned in a given year without those funds. In order to obtain the absolute size of this effect, it was necessary to multiply this deviation by the value found in national statistics. A forecast prepared for the purpose of this study was the benchmark for the period until 2025. $\Delta GDP_t^{(i)} = GDP_t^{(i)} \varepsilon_{GDP,t}^{(i)}$ <ul style="list-style-type: none"> The obtained absolute value of the impact of structural funds on V4 economies (broken down by year) was corrected using the results of CAWI questionnaire. This gave an estimated absolute impact of cohesion policy on the output in each of the V4 countries (<i>i</i>), in each year taken into account (<i>i</i>) and in each of 59 sections (<i>s</i>): $\Delta GDP_{s,t}^{(i)} = \frac{E_s^{(i)}}{E^{(i)}} \Delta GDP_t^{(i)}$
results	<p>As a result, we produced a table presenting the impact of structural funds on the gross output of individual sectors of the V4 economies in 2007-2013 and the forecast for 2014-2020. All variables were expressed in absolute terms (i.e. in 2010 euros).</p>

Stage 2 <i>Estimating additional investment and consumption imports broken down by sector, in which the imported goods came from</i>	
data sources	methods of data analysis
<ul style="list-style-type: none"> results of Stage 1 import intensity of individual sectors of the V4, 	<ul style="list-style-type: none"> Import intensity coefficients (for each of 59 sections of V4 economies) were calculated as the ratio of the value of imported final goods (the value of which, in a breakdown into imports from EU-15 and the remaining economies, is given in the table of imported goods and services) and the

³ Based on the assumptions of evaluations by Institute for Structural Research completed in 2009 and 2011.

Stage 2 <i>Estimating additional investment and consumption imports broken down by sector, in which the imported goods came from</i>	
<p>estimated using the supply and use tables.</p> <ul style="list-style-type: none"> investment and consumption imports intensity, estimated using the import and supply and use tables. 	<p>total level of domestic value added of each section (included in the input-output table). However, since the impact of the funds in Stage 1 is calculated as the impact on GDP in individual sectors/sections, additional final output (i.e. gross output growth (or value added growth), plus the increase in imports) was estimated (for each section and each year of the study) as the sum of GDP growth and the product of GDP growth and the above-mentioned import intensity.</p> $\Delta Y_{s,t}^{(i)} = \Delta GDP_{s,t}^{(i)} \left(1 + \frac{im_{s,2005}^{(i)}}{y_{s,2005}^{(i)}} \right)$ <ul style="list-style-type: none"> The obtained vectors of absolute impact of the implementation of cohesion policy in the V4 countries on final outputs of individual sections were multiplied by the intensity of consumption and investment imports of the V4 economies, calculated as the ratio of consumer and investment imports of individual sections (available in the input output table of imported goods) and the final output of these sectors (available in the general input-output table). The obtained estimates of additional investment and consumption imports were presented in a breakdown by the section where the imported products originated from, i.e. the corresponding sections of exporting economies. Next, we multiplied these results by the share of imports of each product from EU-15 countries in total imports of that product in V4 countries (available from the supply table)
results	<p>As a result, in this stage we obtained a table of additional investment-consumption imports, broken down by the sections of exporting economies. Data were presented separately for two periods: 2007-2013 and 2014-2020 (forecast).</p>

Stage 3 <i>Estimating the gross output growth in a breakdown by sectors of V4 economies</i>	
data sources	methods of data analysis
<ul style="list-style-type: none"> the results of Stage 1 (table of the additional final domestic output of individual sections) input-output tables for individual V4 economies 	<ul style="list-style-type: none"> According to the Leontief method, growth of gross output in individual sections of V4 economies (i.e. the final output of individual sections plus intermediate consumption) is determined using the input-output table. To this end, we used the following formula (for each V4 country): $\Delta X_t^{(i)} = (I - A^{(i)})^{-1} \Delta Y_t^{(i)}$

Stage 3 <i>Estimating the gross output growth in a breakdown by sectors of V4 economies</i>	
	<ul style="list-style-type: none"> where $A^{(i)}$ is a matrix of the cost of the economy (i.e. each element of the matrix A, calculated directly from the input-output table, $a_{ij}=x_{ij}/X_j$, is a share of materials from the i section in the total output of the j section), I is an identity matrix, $\Delta Y_t^{(i)}$ is a vector of the growth of the domestic final output in the country i in the year t, and $\Delta X_t^{(i)}$ is a corresponding growth of the final output. This formula was separately applied for every year in the two periods being analysed: 2007-2013 and 2014-2020.
results	As a result, using the Leontief method, we obtained a table of final output growth, in a breakdown by individual section of the V4 economies and each year (2007-2013 and 2014-2020 – forecast).

Stage 4 <i>Estimating the additional intermediate imports in a breakdown by individual sections of the V4 economies</i>	
data sources	methods of data analysis
<ul style="list-style-type: none"> results of Stage 3 intensity of imports of intermediate goods, calculated using the supply and use tables. 	<p>The intermediate import intensity of individual sections was calculated using input - output table of imported goods, and the input - output table of domestic goods. It was derived by dividing of imports used in the production in a given section by their (domestic) final output. The obtained coefficients were multiplied by the forecasted final output growth in each section resulting from the implementation of cohesion policy in individual V4 countries. This algorithm was repeated individually for each year in the period 2007-2013, and also for each year of the forecast period (2014-2020).</p> $\Delta im_prod_{s,t}^{(i)} = \Delta X_{s,t}^{(i)} \frac{im_prod_{s,2005}^{(i)}}{X_{s,2005}^{(i)}}$
results	As a result, we obtained a table of intermediate import growth in individual sections of V4 economies, in a breakdown by year (2007-2020/2025).

Stage 5 <i>Estimating the additional intermediate imports of V4 countries in a breakdown by individual sections of the EU-15 economies</i>	
data sources	methods of data analysis
<ul style="list-style-type: none"> • results of Stage 4 • tables of the sectoral structure of imports for individual V4 economies 	<ul style="list-style-type: none"> • The table of the sectoral structure of imports, $B^{(i)}$, was estimated using the input - output table of imported goods. This matrix comprehensively described the sectoral structure of imports in each sector of V4 economies: each element b_{ij}/b_j denotes the share of imports of products from the i section in the total imports of the j section. Then, for each year and each V4 country, the matrix of import structure was multiplied by the vector of intermediate imports of sections of V4 economies (obtained in stage 4): $\Delta im_p_t^{(i)} = B^{(i)} \Delta im_prod_t^{(i)}$ • Then, we calculated the share of EU-15 in the additional imports. $\Delta im_p_{s,t}^{(i)} = \frac{im_{UE15,s}^{(i)}}{im_s^{(i)}} \Delta im_p_{s,t}^{(i)}$
results	<p>As a result, we obtained a table of additional intermediate imports resulting from the implementation of cohesion policy in the V4, in a breakdown by sections of exporting economies. This table was addition to the table of additional consumption and investment imports calculated in stage 2.</p>

Stage 6 <i>Disaggregation of additional imports of V4 countries induced by the EU Cohesion Policy, into individual EU-15 countries</i>	
data sources	methods of data analysis
<ul style="list-style-type: none"> • results of stages 2 and 5 • import structure tables of economies in Visegrad Group countries, broken down by EU-15 countries 	<ul style="list-style-type: none"> • The main objective of this stage was the multiplication of vectors of additional consumption and investment imports and intermediate imports (production) by the import structure table (import of V4 countries from EU-15 countries), broken down into sections of V4 economies. $\Delta Im_p_{s,t}^{(i)(u)} = \frac{Im_{s,t}^{(i)(u)}}{Im_{s,t}^{(i)}} \Delta Im_p_{s,t}^{(i)}$ $\Delta Im_ik_{s,t}^{(i)(u)} = \frac{Im_{s,t}^{(i)(u)}}{Im_{s,t}^{(i)}} \Delta Im_ik_{s,t}^{(i)}$ • As a result we computed two tables describing additional consumption and investment as well as intermediate imports induced by the implementation of Cohesion Policy in V4 countries, broken down into each EU-15 country and separate sections of their economies for each year being analysed. For the 2014-2020 period we used the average structure from the 2007-2013 programming period.

Stage 6 <i>Disaggregation of additional imports of V4 countries induced by the EU Cohesion Policy, into individual EU-15 countries</i>	
results	Estimates of the total additional imports produced by adding the consumption and investment imports and intermediate imports

Stage 7 <i>Referring the estimation of additional export to actual structure of foreign trade in the EU-15</i>	
data sources	methods of data analysis
<ul style="list-style-type: none"> • results of Stage 6 • data on changes in V4 imports from individual EU-15 countries, by sectors • data on contributions of individual EU-15 countries to the EU budget in 2007-2013 and 2014-2020 periods 	<ul style="list-style-type: none"> • In this stage we analysed the relative importance of imports induced by the implementation of cohesion policy in the Visegrad countries. The resulting estimates were compared with the actual and projected volume of trade.
results	Additional exports of the EU-15 to the Visegrad Group countries, induced by the EU cohesion policy, were referenced to the size of funds EU-15 countries spend on financing the EU budget.

3 Microeconomic analysis

The goal of macroeconomic part of this evaluation was to calculate the value of benefits resulting from direct involvement of companies from EU-15 countries as contractors on EU-funded projects. This approach enabled us to estimate the value of direct export benefits and direct capital benefits.

Direct benefits were assessed on the basis of microeconomic study outcomes, which was aimed at collecting detailed data on the budgets of Cohesion Policy projects financed in the V4. The microeconomic study consisted of three stages:

- **Survey among the beneficiaries of Cohesion Policy-funded projects:** the survey was conducted using the CAWI method, where respondents were asked to fill in an online form tailored to specific project profiles.
- **Supplementary spreadsheet questionnaire:** this was applied to top transport infrastructure projects in Poland and Czech Republic for formal and practical reasons. Those unable to fill in the online questionnaire could do so on a spreadsheet.
- **Examination of public procurement data from the V4:** to verify information on public contracts awarded in top infrastructural projects, several investigations were carried out on publicly available data sets and using the resources of the institutions responsible for rolling out European funds in the V4.

The premise in the microeconomic study was to cover the largest possible portion of the financed projects. The number of mailed questionnaires was restricted to a random sample only in interventions with a relatively large number of small projects. After the survey, analytic weights were applied to 13 intervention categories to extrapolate the results onto the entire population of projects. The survey questionnaire had the following structure.

block	scope	respondents
BLOCK 1. Contractors and suppliers	information on the structure of project's budget, identification of entities involved as contractor/suppliers	all respondents
BLOCK 2. Assessment of cooperation with foreign contractors/suppliers	reasons for choosing a foreign contractor, previous experience with such entities, assessment of cooperation	all respondents who declared in BLOCK 1 presence of foreign contractors
BLOCK 3. Externalities	identification of possible positive externalities	companies and universities (some categories of intervention)
BLOCK 4. Additional information	-	all respondents

Ultimately, the investigation covered some 31,000 projects⁴ for which either survey questionnaires were submitted or public procurement data was analysed. The total value of these projects stands at approx. 41% of the value of all Cohesion Policy-financed projects in the V4 in the 2007-2013 programming period.⁵

⁴ Approx. 123,000 survey invitations were sent.

⁵ A relatively greater survey take-up in Slovakia is due to the small number of projects supported by the Cohesion Policy in the 2007-2013 programming period

Country	Number of projects covered by the microeconomic study (completed questionnaires or examination of public procurement data)	Share of project value covered by the microeconomic study in the global value of projects financed in the 2007-2013 programming period
Czech Republic	6,300	38%
Hungary	6,400	41%
Poland	15,100	41%
Slovakia	2,300	45%

A relatively large portion of investigated projects in the available budget was found in transport and environmental protection interventions (over 70%), as detailed public procurement data on top infrastructural projects was available, and additionally the information could be verified manually. A smaller quota of human capital projects (of less than 30%) is the result of a limited number of survey samples, as mentioned above, and of a relatively small number of returned questionnaires, especially in Poland and the Czech Republic. Yet, the number of collected questionnaires in each category was sufficient for extrapolating the results onto the entire project population.

In the analysis of direct benefits, companies which provided supplies or services as part of a project funded by Cohesion Policy are assigned to one of the three categories: companies registered in the given country with a majority national ownership, companies registered in the given country with a majority foreign ownership and companies registered abroad.

company type	definition	interpretation of benefits to the EU-15	
(1) domestic company – national ownership	a company whose registered in one of the V4 countries, with a majority national ownership	No benefits to EU-15 countries	
(2) domestic company – foreign ownership	a company registered in one of the V4 countries, with a majority foreign ownership	tradables direct export benefits (already included in the results of the macroeconomic study)	non-tradables direct capital benefits (added to the results of the macroeconomic study)
(3) company registered abroad	a company registered abroad, whereas its branches, representative offices and distribution centres are in V4 countries	direct export benefits (included in macroeconomic benefits)	

When defining the status of a company, the following additional assumptions are applied:

- Since in most cases we did not possess information on the distribution of remuneration between syndicate (consortium) members, **all the remuneration was attributed to its leader** in our calculation. This means that our analysis skips the remuneration of EU-15 companies if they were only as a partner of a consortium. Such situations were relatively common in construction projects.
- Defining **the company status was one of the elements of the microeconomic study**.

- The registered office of the company was defined based on the available contractor data from the project documentation, which usually was not a problem (data put down in the contract).
- In the case of companies registered in V4 countries, the ownership structure was defined on the basis on the status disclosed in the commercial register, which shows the majority foreign ownership profile. In such a case, the next step consisted in assigning the country of origin to the owner, based on the publicly available information (including websites of companies or data of the holding company).
- As far as the projects covered by the survey are concerned, data were entered by beneficiaries and then verified by the research team after the survey.

By default, **the entire remuneration was assigned to the contractor**, leaving out (due to the lack of appropriate data at the project level) potential remuneration of local subcontractors. However, we take this matter into account at the sectoral level when defining the scale of benefits to EU-15 countries (see Box 5). Among foreign companies, EU-15 countries and companies from the remaining V4 countries were separated on each occasion. In this context, it is interesting to note the activity of Czech companies in Slovakia.

EU-15 direct benefits following Cohesion Policy implementation in the V4 countries are connected with direct involvement of foreign enterprises as contractors in projects co-financed by the European funds. In the methodology applied in this report, EU-15 benefits are linked to two parameters: legal form of the foreign contractor and the type of products/services provided by the contractor.

Products and services provided by foreign or majority foreign-owned companies are divided into 3 categories:

- tradable industry products, i.e. all industry products, including machines, electrical appliances, transport equipment, computers, electronic equipment, which as a rule can be manufactured in any country, regardless of the country of delivery;
- tradable services, i.e. all services which can be provided regardless of the country of delivery, including in particular software delivery and ICT services;
- non-tradable services which can be provided only in the country of delivery, including in particular construction services and Customer's supervision.

The remuneration of foreign contractors for carrying out projects co-financed under Cohesion Policy can be divided into three elements: intermediate costs (covers the cost of all intermediate products and services used in production process), workers' wages and company's profit.⁶

⁶ The shares of individual categories in each country was determined on the basis of input-output tables published by Eurostat.

category	domestic companies – foreign capital			foreign companies		
	intermediate costs	wages	profit	intermediate costs	wages	profit
manufacturing (tradables)	+	+	+	+	+	+
services (tradables)	+	+	+	+	+	+
services (non-tradables)	-	-	+	-	-	+

“+” indicates benefits to the EU-15 countries, “-“ indicates domestic benefits (V4 countries)

In the case of industry products and tradable services, the total remuneration of a foreign contractor was regarded as a benefit of the EU-15 countries. These results from the specific nature of these products and services, which can be provided regardless of the country of delivery. In this case, no transfer of production process should be expected, even if the contract is implemented in one of the V4 countries. On the other hand, in the case of non-tradable services, in particular construction services, services have to be rendered in the country where they are ordered. Therefore, regardless of whether the tender is carried out by a domestic company with a majority foreign ownership or by a company registered abroad, local workforce and materials (for example sand or cement) are used. In this case, in our analysis we consider that EU-15 benefits boil down to profit on contract execution only.

Categories of products/services described above, combined the company status, translate into the interpretation of (direct) direct benefits as part of total benefits.

- We interpret benefits from delivery of industrial products and tradable services as additional exports already included in the results of the macroeconomic study regardless of whether the contract was executed by a company from a EU-15 country or a company with a majority EU-15 ownership, registered in one of the V4 countries. Moreover, we interpret in a similar way benefits resulting from provision of tradable services by companies from the EU-15 countries.
- We interpret benefits related to provision of non-tradable services by majority foreign-owned companies registered in the V4 countries as benefits from capital that are not part of additional export, and therefore we add them to the results of the macroeconomic study.