



# Support to large enterprises

## Final Report Work Package 4

### Annex Summaries of Case Study Reports

*Ex post evaluation of Cohesion Policy programmes  
2007-2013, focusing on the European Regional Development  
Fund (ERDF) and the Cohesion Fund (CF)*



**EUROPEAN COMMISSION**

Directorate-General for Regional and Urban Policy  
Directorate B - Policy  
Unit B.2 Evaluation and European Semester

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CCI: 2013CE16BAT033

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Luxembourg: Publications Office of the European Union, 2016

ISBN 978-92-79-58775-7

doi: 10.2776/797492

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## **Evaluation Final Report**

### **Ex post evaluation of support to large enterprises**

#### **Annex**

#### **Summaries of Case Study Reports**

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The authors are grateful for the very helpful comments from the EC experts at DG REGIO, particularly to Daniel Mouqué (Evaluation Officer in charge), Mariana Hristcheva, Veronica Gaffey, Kai Stryczynski and Marielle Riché.

They also express their gratitude to Terry Ward (Applica, Work Package 1) for his helpful thoughts throughout the project and particularly to around 200 stakeholders who accepted to respond to the team's questions and contributed to the realisation of the case studies. The authors are responsible for any remaining errors or omissions.

Date: 14 December 2015

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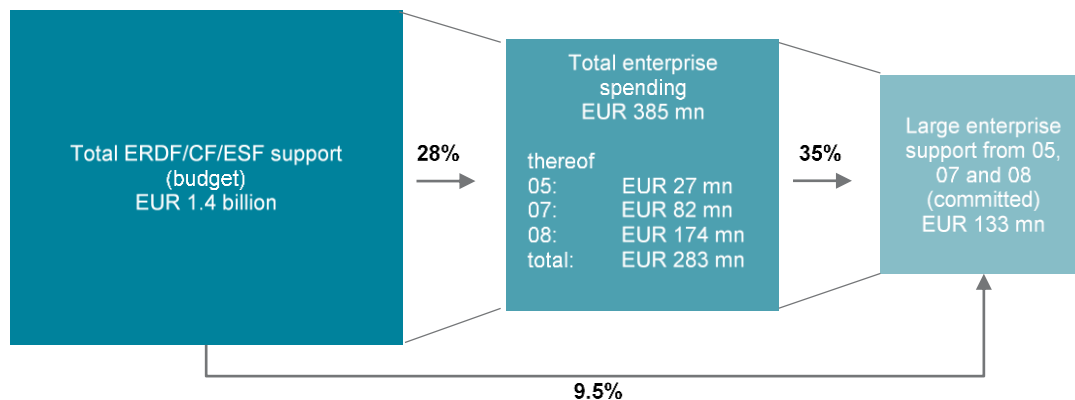
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## 1. AUSTRIA: ERDF OPERATIONAL PROGRAMME 2007-2013 STYRIA

### Austria

About EUR 1.4 billion of ERDF/CF/ESF funding has been budgeted for Austria in the 2007-2013 programming period. 28% of the available funds have been committed as direct enterprise support.<sup>1</sup> The aim of the Austrian promotion of economic development at a national level is set on strengthening the competitiveness of local enterprises and the long-term maintenance of employment with a focus on small and medium-sized enterprises. The nationwide public support-schemes primarily focus on small and medium sized enterprises. Nevertheless the support of large enterprises does play a central and fundamental role and the majority of the relevant financing institutions in Austria directly support large enterprises under specific conditions<sup>2</sup>. Large enterprise support in the 2007-2013 funding period was primarily targeted at embedding existing companies in the economies of the region instead of attracting new firms. In Austria of the total ERDF direct enterprise support 35% has been awarded to large enterprises.

**Figure 1: Committed support by relevant expenditure codes and large enterprise status in Austria**



Source: KPMG/Prognos (2015) based on data from Managing Authorities.

In Austria through 194 projects a total of 148 large enterprises have been supported, which corresponds to 7.2%<sup>3</sup> of all large enterprises in Austria. One firm had 1.3 projects on average, which reveals that occasionally a firm was supported multiple times during the programming period. The average amount of ERDF support per supported large enterprise was EUR 0.9 million. The number of supported projects per enterprise as well as the average amount of ERDF support in Austria was well below the average of the eight Case Study countries.

<sup>1</sup> For this evaluation the analysis of direct enterprise support focuses on the expenditure codes 05 (advanced support services for firms and groups of firms), 07 (investment in firms directly linked to research and innovation), and 08 (other investment in firms) as the core of enterprise spending. If not stated otherwise the term direct enterprise support refers to the activities under these expenditure codes.

<sup>2</sup> Large enterprises which are located in selected regional development areas. The corresponding programmes featuring this restriction are: ERP, EIB, KfW and AMF.

<sup>3</sup> Based on the number of active large enterprises that fulfil the employee and turnover criteria.

**Table 1: Key aggregates on the number of projects and supported enterprises by Case Study country**

	Countries								
	ES	DE	PL	CZ	IT	HU	PT	AT	SUM
<b>Number of supported projects</b>	<b>1,269</b>	<b>763</b>	<b>539</b>	<b>520</b>	<b>416</b>	<b>409</b>	<b>407</b>	<b>194</b>	<b>4,517</b>
Number of supported large enterprises	398	632	408	339	270	273	319	148	2,787
Average number of supported projects / large enterprise	3.2	1.2	1.3	1.5	1.5	1.5	1.3	1.3	1.6
Average amount of large enterprise support / enterprise (EUR mn)	0.8	1.1	2.8	1.4	0.9	1.7	3.5	0.9	1.6

Source: KPMG/Prognos (2015), based on Monitoring and information systems of Member States; (DG Regio): AIR2013 ERDF/CF raw database on project selection.

For the 2007-2013 programming period the regional distribution of large enterprise support in Austria shows that the regions bordering the newer Eastern European Member States directed a higher amount of ERDF funds towards large enterprises than the regions in Western Austria. The Operational Programme Burgenland, the only Austrian programme under the convergence objective, leads expenditure on large enterprises with EUR 50 million dedicated to large enterprises, followed by Styria with EUR 32 million.

**Figure 2: Committed direct enterprise support to large enterprises by region in Austria**

Source: KPMG/Prognos (2015) based on data from Managing Authorities.

## Styria

For the Austria Case Study the regional ERDF Operational Programme 2007-2013 Styria was chosen for further analysis. Among the regional competitiveness and employment regions in the 2007-2013 period Styria received with EUR 155 million the largest part (27.9%) of the Austrian ERDF budget of EUR 555 million for the competitiveness and

employment objective.<sup>4</sup> The ERDF Operational Programme 2007-2013 Styria accounted for about 24.4% of ERDF spending for direct large enterprise support in Austria.

### Policy and Programme Context

As a **Competitiveness region** Styria shows a favourable position in employment and education as well as a positive development of export performance. Styria has developed into a leading centre for private R&D investments, primarily through the presence of R&D units of large enterprises. With private R&D expenditure as a share of GDP of around 3.11% Styria scores higher than the Austrian (1.84%) and EU28 average (1.24%). The economy of Styria is characterized by a **strong focus on industrial production**. Large international enterprises are considered to have a particular position in the Austrian and Styrian economy as they fulfil the role of Leading Competence Units (LCU).<sup>5,6</sup> However, when it comes to economic specialisation and intensity of innovation, Styrian regions have different profiles. For instance, industry and R&D activities are mainly concentrated in the area of the capital Graz and parts of Upper Styria.

Styria applies an innovation-based economic strategy which transforms Styria into a Europe-wide benchmark for intelligent change towards a knowledge-based manufacturing economy until 2020. Already being an established business location for R&D, the challenge Styria is facing is to safeguard and further develop the innovative potential of leading enterprises as well as identifying and developing areas with future growth potential.<sup>7</sup> Through these strategies leading subjects and core competences are to be further developed. The public support scheme of business promotion in Styria is also explicitly concentrating on small and medium-sized enterprises, as stated in the Guideline for the Styrian Economic Promotion.<sup>8</sup> The support of large enterprise is mainly confined to companies located within selected regional development areas.

Large enterprises do not play an explicit role and are not particularly mentioned in the Styrian Operational Programme. Nevertheless, they do play a crucial role in the economic strategy of Styria<sup>9</sup>. Styria identified seven levers that need to be applied; of which one is the "Aggressive Economic Policy and Support of the Business Potential of Styria".<sup>10</sup> In this framework one pillar are **leading regional companies** ("Leitunternehmen"). About 200 large industrial and leading enterprises with approximately 60,000 employees<sup>11</sup> are based in Styria. These firms, especially when operating internationally, do essentially

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<sup>4</sup> Bundeskanzleramt Österreich (2015), „Programmperiode 2007-2013“, online available at <https://www.bka.gv.at/site/6093/default.aspx> (last accessed May 27, 2015).

<sup>5</sup> Schneider et al. (2008), The economic interdependence of large, medium and small sized companies in Styria. An analysis of two Styrian regions Fürstenfeld and Deutschlandsberg" („Die wirtschaftliche Verflechtung von großen, mittleren und kleinen Unternehmen in der Steiermark. Eine Analyse zweier steirischer Regionen: Fürstenfeld und Deutschlandsberg“) , available online: <http://www2.wkstmk.at/wko.at/industrie/pdf/IWISStudie.pdf>, p. 18. (last accessed May 27, 2015).

<sup>6</sup> Land Steiermark (no date), "Wirtschaftsstrategie Steiermark 2020", available online at: [http://www.wirtschaft.steiermark.at/cms/dokumente/10430090\\_12858597/002b1fe7/WiSt%20Steiermark%202020\\_Wachstum%20durch%20Innovation.pdf](http://www.wirtschaft.steiermark.at/cms/dokumente/10430090_12858597/002b1fe7/WiSt%20Steiermark%202020_Wachstum%20durch%20Innovation.pdf) (last accessed: May 27, 2015).

<sup>7</sup> Das Land Steiermark: "Wachstum durch Innovation – Wirtschaftsstrategie Steiermark 2020".

<sup>8</sup> In 2011 for example 85.3 % and in 2013 81.5% of all supported projects were small and medium-sized enterprise-based projects. Although, more than one third (in 2011 43.3% and in 2013 33.5%) of the total amount of granted aid volume was distributed to large enterprises. Styria Business Promoting Agency (2011): "Annual Report 2011" (Jahresbericht 2011), Government of Styria (2013): Economic Report 2013 ("Wirtschaftsbericht 2013").

<sup>9</sup> Government of Styria: "Economic Strategy ("Wachstumsstrategie Steiermark 2020")

<sup>10</sup> The others are: "Innovation Foundation", "Key Factors of R&D and Human Resources", "Entrepreneurship and Start-ups", "Improvement of Financial Conditions", "Internationalisation" and "Regional Potential".

<sup>11</sup> Of which about 75% are in companies up to 500 employees.

characterise the pace of development and are highly R&D orientated. The interaction between small and medium-sized enterprises and large enterprise is a key success factor for regional development and excellence. Large firms induce multiplier effects in the local economy. The rationale of supporting large enterprises therefore lies in creating spill-over effects, attracting further companies and hence FDI as well as securing the local business environment and attractiveness.

While in the 2000-2006 funding period, ERDF support was strongly focussing on inward investments and foreign multinationals, the focus of large enterprise support has shifted quite strongly in the 2007-2013 period. This was mainly motivated by the successful structural transformation process of Styria, in which large enterprises played an important role, with nowadays well above average R&D intensities and high value adding industries in the programme area. At the same time, public officials reported the need of large enterprise support to prevent a "branch plant"-syndrome to emerge, due to the high number large enterprises in Styria which are externally controlled by foreign corporations (also among the supported large enterprises). Hence, the key focus of large enterprise support was on embedding the firms into the regional business ecosystem, strengthening local sourcing and value-chain integration with a particular focus on the so-called "leading regional companies" (Leitbetriebe). Furthermore, as a more hidden objective for large enterprise support in Styria, the "need to offer them incentives so that they stay in Styria despite higher cost structures" than in other Eastern European locations or locations outside Europe, was reported in interviews with public officials.

Large enterprise support in Styria has been linked to and analysed according to the following two generalised Theories of Change covering support for technological developments in general and in leading companies in particular as well as for R&D activities.

**Table 2: Overview of relevant Theories of Change in Styria's approach to large enterprise support**

Main focus of the theory	Country-level Theory of Change	Corresponding generalised Theory of Change
Technological investment to leading enterprises	<b>ToC "AT2"</b> Leitunternehmen / home base augmenting	<b>ToC „LE2"</b> Technological upgrading
Technological investment	<b>ToC "AT3"</b> Home base expansion	<b>ToC „LE2"</b> Technological upgrading
R&D	<b>ToC "AT1"</b> R&D for innovation dynamics	<b>ToC „LE4"</b> Investment in R&D capacity

Source: KPMG/Prognos (2015).

These Theories of Change were the basis for the theory-based impact assessment. The results are summarised towards the end of this chapter.

### Quantification of support to large enterprises

As direct enterprise support from the ERDF Operational Programme 2007-2013 Styria **EUR 32.3 million were committed to large enterprises** in 72 projects. Styria accounts for about 24.4% of ERDF direct enterprise support for large enterprises in Austria. The average project size in Styria is about EUR 449 000 per project, which is below the average project size in Austria (EUR 684 000) and less than half of the average project size across the selected eight Case Study countries (EUR 1 million).

The form of ERDF large enterprise support was **exclusively non-refundable**.

The characteristics of the supported large enterprises are as follows:

- **54 large enterprises** have been supported.
- The **average amount** of ERDF support has been about **EUR 0.6 million** per supported large enterprise, which is below the Austrian average (EUR 0.9 million) and considerably lower than the average of EUR 1.6 million across all Case Study countries.
- One firm had **1.3 projects on average**. The majority (70%) of the supported firms in Styria was supported only once in the funding period.
- The majority of supported large enterprises have **less than 250 employees at the project site**. However, the vast **majority are part of a corporation**. When examining the number of employees of the corporations three quarters of the supported firms belong to the category of over 1000 employees and only 4.1% to the category of 0-249 employees.
- There is a stronger concentration on **high-and medium-high technology manufacturing firms** with 39% of supported large enterprises. This share is higher than the Austrian average of 33% and the total average of all eight Case Study countries of 34%.
- The key recipients of support stem from industries like mining, automotive, glass production, and renewable energies.
- Supported large enterprises are **mostly multinational corporations**, with domestic multinational corporations making up the biggest share (54%) of supported large enterprises. National companies are less represented in Styria (17%) than in Austria overall (27%) and across all Case Study countries (40%).

**Table 3: Distribution of supported large enterprises in Styria by type**

Large enterprise type	ERDF funds		Number of enterprises (incl. multiple support)	
	EUR	%	No.	%
Foreign multinational corporation	11 961 057	37.0	16	29.6
Domestic multinational corporation	14 422 811	44.6	29	53.7
National company	5 955 233	18.4	9	16.7

Source: KPMG/Prognos (2015) based data provided by the Government of Styria.

### Results from the theory-based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialisation of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Styria has been linked to and analysed according to the following two Theories of Change LE2: Technological upgrading and LE4: Investment in R&D capacity.

## “LE2: Technological upgrading”

The supported large enterprises in Styria were across-the-board able to **increase their competitiveness** through the ERDF-funded project indicating a moderate effectiveness of support. They improved their technological standards using cutting edge technology, greatly increased production and productivity levels and partly extended local business activities as well as exporting activities – yet in most cases firms were also operating in quite favourable conditions within the market and a relatively trouble-free handling of the financial crisis. Moreover, the supported projects were often a cause for the creation of new jobs in the large enterprises, typically in knowledge-intensive occupations. In fact, when looking at the monitoring data, it can be clearly seen that the supported large enterprises account for the **majority of created jobs** from the ERDF OP in Styria. However, as the in-depth ToC-assessment also illustrates, the support from the ERDF-funds was perceived by the firms classified in “LE2” only to be a **supporting factor or a pre-condition**, i.e. the project funding was no cause for project implementation<sup>12</sup>. So while a positive treatment effect of support to large enterprises in Styria was identified, a **direct additionality** from support is very **questionable** (for similar findings, see Criscuolo et al. 2012).<sup>13</sup> This indicates a high degree of deadweight effects, i.e. many of the projects would have been carried out without ERDF or other public support as well but, as indicated in several interviews with globally operating large enterprises, potentially not in Styria. Moreover, as the mini case studies confirmed, the projects would not have reached the same size nor would they have been implemented in the same speed which was in some cases crucial regarding competitive positioning of the supported large enterprises supporting the durability of operations.

Additionally, what the assessment of “LE2: Technological upgrading” clearly showed is that **indirect and wider effects**, and to some extent, also impacts on regional development are much **lower than expected** in the Theory of Change. In particular the low level of identified spillover effects and relatively low contributions to the development of local infrastructures must be noted here. While the number of studies identifying “positive spillovers roughly equals the number that identify no effects or even negative consequences” (Dachs, 2009, p. 168), it needs to be considered that spillovers require some kind of information to be valuable to both firms in a collaboration, and on the other hand, firms are actively trying to prevent spillovers from happening to reduce the potentiality of revealing business and research secrets<sup>14</sup>. These factors are largely project dependent and the mini case studies mostly covered projects in either highly vertically integrated industries or very specific (niche) markets. As a positive finding, neither a **crowding-out process of SMEs nor a distortion of the market equilibrium** could be identified, mostly based on the reasoning that projects were often both too small and firms did not have any competitors close by.

As regards to the **effects on regional development such as GDP and regional employment rate**, this picture is less clear. From the mini case studies it appears that the regional impact of the projects is largely dependent on their size or the size of the

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<sup>12</sup> For three out of four companies, the support was a supporting factor, for one company, it was a pre-condition.

<sup>13</sup> Similar findings were presented by Criscuolo et al. (2012) who show a causal impact of direct investment support to small and medium-sized enterprises but identify no direct additionality for large enterprises in the UK. Please see Criscuolo, C., et al. (2012), “The causal effects of an industrial policy”, National Bureau of Economic Research.

<sup>14</sup> de Faria, P., & Sofka, W. (2010) “Knowledge protection strategies of multinational firms—A cross-country comparison”, *Research Policy*, 39(7), 956-968.

firm. Across-the-board, the supported firms reported that the implementation of the projects is closely related to job creation inside their own walls as well as in companies with close physical or cooperative proximity to them. A similar result for Styria is presented by Schneider et al. (2008), while not focusing on funding projects. This study on the inter-linkages of large enterprises and small and medium-sized enterprises in the region found that six out of ten jobs were induced through supplier chain integration of small and medium-sized enterprises (intermediate inputs) and secondary demand effects on the regional economy. Yet, while this leaves open the question of causal relationships of funded projects and regional impacts, it is very likely that supported projects act also as supporting factors (not causes or pre-conditions) of these regional impacts. From the ToC-assessment itself, however, it was next to impossible for them to predict the impact of the implemented projects on the entirety of Styria.

#### **“LE4: Investment in R&D capacity”**

The interventions covered in “LE4: Investment in R&D capacity” show that direct intended changes for the supported large enterprises were widely induced, just in line with a project ranking which finds that more than half of the projects performed above expectations. Through the supported projects the analysed large enterprises were able to increase their capacity to innovate (as a central means of LE4) and also to increase productivity and production levels, employment and sales. This finding is in line with a number of econometric studies which find that firms, including larger ones, receiving direct support to R&D from Cohesion Funds or other sources increase their innovation activity and improve in competitiveness (input additionality)<sup>15</sup>. Besides the boost of innovation capacities, the increase in employment is worth highlighting (in particular the increase of roughly 110 R&D jobs), as this contributes to the human capital base in the area and, by creating localised pools of competence, can reinforce the embeddedness of the respective large enterprise in the region.<sup>16</sup> All in all, though, despite the high contribution of large enterprises accounting for 86% of these R&D jobs the total number of created R&D jobs remains far below expectations in Styria.

Furthermore, also in the case of “LE4: Investment in R&D capacity” the ToC-assessment showed that there appears no causal relationship between EU funds and project implementation. Rather, even for R&D and thus more risky projects, the availability of EU funds were reported by the investigated large enterprises to be serving as pre-conditions or supporting factors, i.e. being not the main cause of the R&D project. So while also in the case of direct R&D support to large enterprises this raises the question about deadweight effects, the assessment in Styria did not detect that public support substituted private R&D in the large enterprises. In other words, the supported large enterprises received ERDF funds precisely because they planned to undertake R&D

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<sup>15</sup> See e.g. Warwick, K. and A. Nolan (2014), “Evaluation of Industrial Policy: Methodological Issues and Policy Lessons”, OECD Science, Technology and Industry Policy Papers, No. 16, OECD Publishing; PAG Consult (2014), “Effects of Cohesion Policy Support Targeted at Large Enterprises in Poland – evaluation summary. Presentation at 5<sup>th</sup> International Evaluation & Monitoring Conference, Budapest; Czarnitzki, D. et al. (2011), “Counterfactual impact evaluation of cohesion policy. Work package 2: Examples from Support to Innovation and Research. Final Report”, Katholieke Universitet Leuven.

<sup>16</sup> See e.g. Lam, A. (2007) Multinationals and transnational social space for learning: knowledge creation and transfer through global R&D networks. IN: Polenske, K.R. (Eds.) The geography of innovation. Cambridge University Press: Cambridge; Iammarino, S., Kramer, J-P., Marinelli, E. and Revilla Diez, J. (2012) Technological Capabilities and the Regional Embeddedness of Multinational Enterprises. A Case Study of Germany and the UK, Ch. 7 in: Innovation and Institutional Embeddedness of Multinational Companies, Edward Elgar.



projects and there are rather complementarities than substitution effects between public support and private R&D.<sup>17</sup>

When looking at indirect and wider effects of supported large enterprises under "LE4: Investment in R&D capacity" and the contribution to regional growth in Styria, also here a mixed picture emerges. As the qualitative project ranking shows, 12 out of 18 ranking projects are ranked as having "some" effects – on average, a slightly better performance as for "LE2: Technological upgrading". In particular, the ToC-assessment affirmed direct spillover effects to suppliers and collaborating small and medium-sized enterprises, while a broader scope of knowledge spillovers to the regional business ecosystem were not identifiable in the company interviews – a finding largely in line with an earlier study on the inter-linkages of large enterprises and small and medium-sized enterprises in Styria which found only "latent innovation relationships".<sup>18</sup> Likewise, as has been highlighted above, human capital formation and retention through supported large enterprises is an important supporting factor for the development of the regional human capital base. However, in particular expected wider effects linked to "hard factors", such as improved local R&D or education infrastructures were not identified throughout the case study, i.e. neither being reported by supported large enterprises nor institutional interviewees. Mostly, this can be explained through relatively small average project sizes; a finding also leading to the neglect of crowding-out of SMEs, distorted market equilibrium or visible macroeconomic impacts on regional GDP or employment rates.

## Conclusion

Although the support of large enterprises is not explicitly mentioned in the ERDF Operational Programme 2007-2013 Styria, large enterprises were targeted by regional strategies. Large enterprises were supported to induce technological investments and R&D activities to maintain and expand value generating activities in the region and to increase the embeddedness of large enterprises in the region. Thus, the favourable development of large enterprises was expected to contribute via spillovers also to the development of SME and the region in general. From the ERDF Operational Programme 2007-2013 Styria committed **EUR 32.3 million to large enterprises** as direct enterprise support in 72 projects accounting for about 24.4% of ERDF direct enterprise support to large enterprises in Austria.

As on overarching finding it can be concluded that for both interventions, "LE2: Technological upgrading" and "LE4: Investment in R&D capacity", the **direct effects** induced by the activities of supported large enterprises considerably exceeded the indirect and wider benefits (see Table 4). Overall most of the intended changes of the supported large enterprise projects materialized to some extent or even to a substantial extent in the case of employment. Whereas the supported projects in general showed the expected effects, the causal link between support and project implementation was found to be rather a supporting factor or a pre-condition than a cause.

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<sup>17</sup> This finding is in line with Guellec & van Pottelsberghe de la Potterie (2003) and Garcia-Quevado (2004), who find a large complementarity of public and private R&D funds. However, both publications and also this evaluation cannot provide answers about the scope of additionality. Following Cunningham et al. (2013) it is likely that the additionality for direct R&D support is greatest for small firms, but this evaluation also shows a certain degree of input additionality for large enterprises.

<sup>18</sup> See Schneider et al. (2008). This study found that only 12% of small and medium-sized enterprises in Styria with large enterprises as customers work on R&D topics or projects with them. If they do, however, these small and medium-sized enterprises benefit from rising turnover.

**Table 4: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Styria**

OUTCOME DIMENSIONS	LE2*	LE4*
<b>Effectiveness of support</b>	++	++
• <i>investment</i>	++	++
• <i>productivity</i>	++	+++
• <i>employment</i>	+++	+++
<b>Wider benefits</b>	+	++
<b>Sustainability</b>	++	++
<b>Contribution of large enterprise support to the general economic health of the region &amp; small and medium-sized enterprise base</b>	++	++

\* Effects: Substantial (+++), Some (++), Little (+) and None (0)

The colour coding represents the "Strength of the evidence chain" that describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).

Source: KPMG/Prognos (2015).

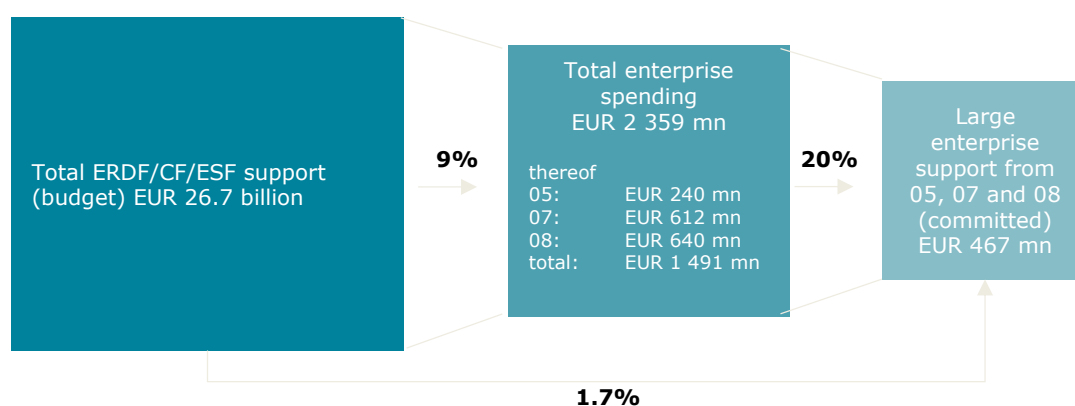
As the analysis of monitoring data showed ERDF direct enterprise support was almost evenly split between SMEs and large enterprises with both enterprise size classes receiving around EUR 32 million. However, large enterprises managed to create more jobs, 1174 compared to 814 in SMEs. Hence, in Styria the estimated cost in terms of public support of one job created are much lower in large enterprises. The efficiency of support was therefore higher for large enterprises than for small and medium-sized enterprises.

## 2. CZECH REPUBLIC: OPERATIONAL PROGRAMME ENTERPRISE AND INNOVATION 2007-2013

More than EUR 26.7 billion of ERDF/CF/ESF funding has been budgeted for the Czech Republic in the 2007-2013 programming period. The total committed amount at the end of 2013 was EUR 24.4 billion.

9% of the budget has been accounted as **enterprise spending, from which 20% has been awarded to large enterprises** resulting in a 1.7% share of total large enterprise support from the whole budget in the Czech Republic.

**Figure 3: Committed support by relevant expenditure codes and large enterprise status in the Czech Republic**



Source: KPMG/Prognos (2015) based on data from Managing Authorities.

In the Czech Republic through 520 projects a total of 339 large enterprises have been supported. One firm had 1.5 projects on average, which reveals that occasionally a firm was supported multiple times during the programming period. This figure is an average among the eight case study countries. The average amount of ERDF support per supported large enterprise was EUR 1.4 million, which was a bit below the average of the eight case study countries (EUR 1.6 million).

The Czech case study focuses on the **Operational Programme Enterprise and Innovation 2007-2013**, which accounted for **all of the support towards large enterprises** in Czech Republic.

### Policy and Programme context

After a long period of GDP growth, the performance of the Czech Republic started to slow down as a result of the world financial crisis in 2008. Since then, GDP has recovered to its pre-crisis value in 2011. Nevertheless, growth in recent years has been slower than in the period prior to the world financial crisis.

**The Czech Republic's most developed region, Prague**, with a GDP per capita of EUR 31,200 was ranked 273rd among the 1,342 NUTS3 regions of the EU countries and EU candidates in 2011. The other regions ranked among the 300 least developed EU-regions, as their GDP per capita ranged only between EUR 10,600 and EUR 13,900. This comparison shows the two most pressing challenges for the Czech economic policy, i.e. **that there is a large disparity** characterised by Prague ahead of the other 13 regions

**in terms of all development indicators** and that these regions are considerably lagging behind in terms of economic development. Prague is also ahead of the rest of the regions in term of labour market statistics, average wages and share of students in tertiary education.

Except for Prague, all the other regions are classified as convergence regions, characterised by underdeveloped infrastructure, fewer job opportunities, complicated access to tertiary education, low-skilled labour and poorer economic performance.

The core of the strategy of enterprise policy is to support the small and medium-sized enterprises, which comply with the operational programmes' objectives. The overall funding received from the various EU funds within the eight thematic operational programmes in the period of **2007-2013 amounted to more than EUR 21 billion**. It equates to approximately 3% of the Czech GDP in the same period. In the Operational Programme Enterprises and Innovation resources were allocated in the amount of EUR 3.12 billion, 14.7% of all resources allocated to all operational programmes.

Besides EU funding, the Czech government introduced systematic investment incentives in 1997. The current version of the scheme includes **tax breaks** for up to 10 years, **subsidies** related **to job creation and training** employees, and **support related to the acquisition of land**. The incentives are available for investors who decide to invest at least CZK 100 million (~EUR 1.8 million) anywhere in the country, or CZK 50 million (~EUR 0.9 million) in disadvantaged regions. Incentives are not explicitly designated for large enterprises, but considering the limit of investment only enterprises with significant level of resources are able to take advantage of it.

Addressing the barriers to innovation, the overall objective of the Operational Programme Enterprise and Innovation 2007-2013 was to increase the competitiveness of the Czech economy and to bring the innovation performance of the industry and services sectors closer to the level of the leading industrial EU member states. To support the main objective of the programme, these axes were corresponding to one specific objective as follows:

The support for Czech large enterprises is **mainly focused on innovation projects, projects for development of more sophisticated technological solutions and projects contributing to ecological effectiveness of production and higher energy efficiency**. Managing authorities argue that the character of these types of support decrease the possible harm effects to unsupported competitors. They also emphasise that projects of large companies have bigger effects (price performance ratio) for EUR 1 of support in all these areas. These projects have higher innovative potential and allow for more extensive cooperation between companies and public/academic sectors.

In pursuing the above programme objectives and addressing the key problems of Czech Republic, the relevant **Theories of Change** related to the support of **large enterprises** are summarised in the following table (theories are introduced in detail in the Methodology section of the report).

**Table 5: Main Theories of Change of large enterprise in the Czech Republic**

Underlying socio-economic problems	Focus of the theory	Corresponding generalised Theory of Change
Underdeveloped economy in convergence regions	<i>Technology-driven growth</i>	"LE2: Technological upgrading"
Low level of R&D expenditures and innovation	<i>Innovation-driven growth</i>	"LE3: Innovation support"

Source: KPMG/Prognos (2015).

### Quantification of support to large enterprises

**EUR 467 million** ERDF funding was committed to the **520 supported large enterprise projects** within the Operational Programme Enterprise and Innovation 2007-2013. The average project size was EUR 0.9 million which corresponds to the average EUR 1 million of the eight case study countries.

The form of large enterprise support was **exclusively non-refundable**.

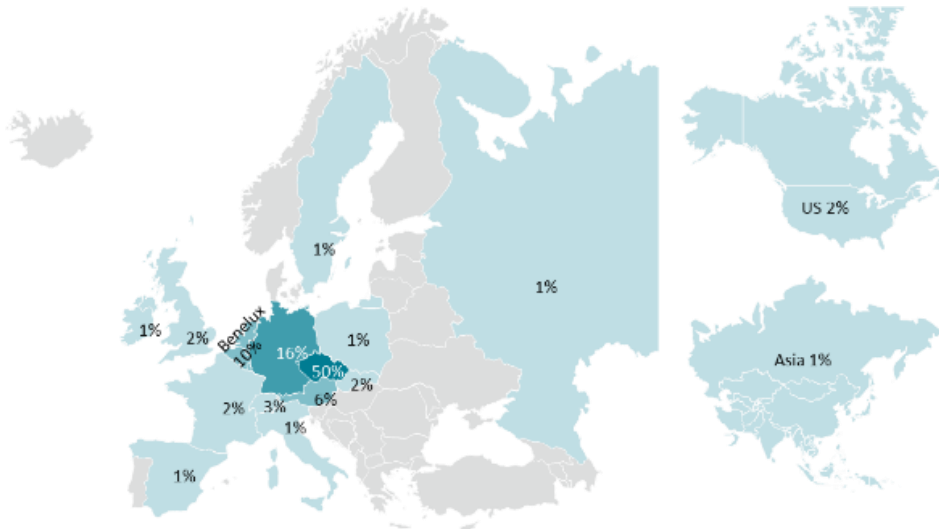
The maximum aid intensity for large enterprises in the Czech Republic is 40%, which is in the top range of the available aid intensity in the eight case study countries. Therefore, the maximum estimation of **total investment** could reach **EUR 1.4 billion**.

Targeting of support – Characteristics of supported large enterprises

The characteristics of the supported large enterprises are as follows:

- **339 large enterprises** have been supported.
- The **average amount** of ERDF support has been nearly **EUR 1.4 million** per supported large enterprise.
- One firm had **1.5 projects on average**, which reveals that occasionally a firm applied several times during the programming.
- **37%** of the supported large enterprises employ **less than 250 people** (but still considered as large enterprises based on self-declaration). Only 13% of the supported enterprises employ more than 1.000 people. These shares are in line with the ones experienced in the eight case study countries.
- The majority of supported enterprises are **foreign multinational ones** (47%), which is relatively high compared to the average 31% share in the eight countries. This does not necessarily mean that ERDF support is less popular among national companies, but rather that their overall number in the Czech Republic is very low.

**Figure 4: Distribution of supported large enterprises by country of origin in the Czech Republic**



Source: KPMG/Prognos (2015) based on Annual Implementation Reports 2013, Ministry of Industry and Trade.

There **was not any targeted support for large enterprises** from Operational Programme Enterprise and Innovation programme in period 2007-2013. None of the priority axes were specifically focused on a single industry or particular region. There were only differences in maximum aid intensity and the maximum amount for project among regions. The subsidies distributed through the programme were not available for the applicants located in Prague.

### Results from the theory based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialisation of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Czech Republic has been linked to and analysed according to the following two Theories of Change: "LE2: Technological upgrading" and "LE3: Innovation support".

#### "LE2: Technological upgrading"

The projects captured under "LE2" have been **successful in helping companies upgrade their services and to develop new solutions contributing to their growth.**

Companies plan their projects as a part of their development strategy and with an eye on factors such as tax levels or strategic location of the country. A large share of projects would have been implemented without the EU support. The support improved their individual business cases and enabled the companies to launch the projects sooner, and with a larger scope. Therefore, the products were developed quicker whilst improving company growth. **However, the support was not found to be the cause of project implementation.**

Investments by the supported companies had significant effects on the development of productivity and employment. The favourable development can, however, be only partially attributed to the supported projects as parallel projects and generally favourable market trends also influenced company development. **Some wider benefits were noted** especially regarding education and training of the local work force in the regions. Also increased labour mobility and wages were observed as a consequence of the large enterprises' presence in the regions, but no causal link with the supported projects was found.

### **"LE3: Innovation support"**

The projects captured under "LE3" have been **successful in helping companies to innovate and upgrade their production** whilst offering products that are more sophisticated with higher added value.

The innovation investment projects contributed to the competitiveness of companies on the international markets and, in the case of mid-cap companies, they contributed to their transformation process from companies with a local focus to healthier firms with capability to export.

**Without support, several projects would have been launched later or with a limited scope.** Regarding indigenous firms, the transformation from smaller firms with regional influence to competitive modern large enterprises is a long-lasting process. The support enabled these companies to implement innovation projects that were needed to move towards this objective. In the case of large multinational enterprises, the availability of EU funds was a supportive factor, but not the cause for their investment.

The companies' investments increased **production** and **productivity**, and **their demand for jobs**. Further demand for jobs is foreseen once the outcomes of the innovations are commercialised.

Interviews with companies revealed that in some cases there were **no available regional R&D partners** in some industries. Even though this has not decreased the efficiency of innovation at firm level, it limited the projects' wider effects on the region in terms of spillover to small and medium-sized enterprises and other possible research partners. In general the local small and medium-sized enterprise base profited from the projects through supplier effects of increased economic activity as well as through the stimulation of an upgrading of their processes and production standards.

### **Conclusion**

**EUR 467 million** ERDF funding was committed to the **520 supported large enterprise projects** within the Operational Programme Enterprise and Innovation 2007-2013. The projects were either "LE2: Technological upgrading" or "LE3: Innovation support".

The following table provides an overview of the contribution of large enterprise support based on the triangulated evidence collected within the programme case study, with reference to the strength of the evidence chain.

**Table 6: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Czech Republic**

OUTCOME DIMENSIONS	LE2*	LE3*
<b>Effectiveness of support</b>	++	++
• <i>investment</i>	++	+++
• <i>productivity</i>	+++	+++
• <i>employment</i>	++	++
<b>Wider benefits</b>	++	++
<b>Sustainability</b>	++	++
<b>Contribution of large enterprise support to the general economic health of the region &amp; small and medium-sized enterprise base</b>	+	++

\* *Effects: Substantial (+++), Some (++)*, Little (+) and None (0)

"Strength of the evidence chain" describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).

Source: KPMG/Prognos (2015).

Evidence shows that, generally, supported projects would be realised without support. However, several projects would have been launched later or with a limited scope. The assessment of the general outcomes shows that the effectiveness of the support, the wider benefits induced and the sustainability of the projects were adequate. On the other hand, the support for technological upgrading showed very little contribution to the general economic health of the region and to the small and medium-sized enterprise base.

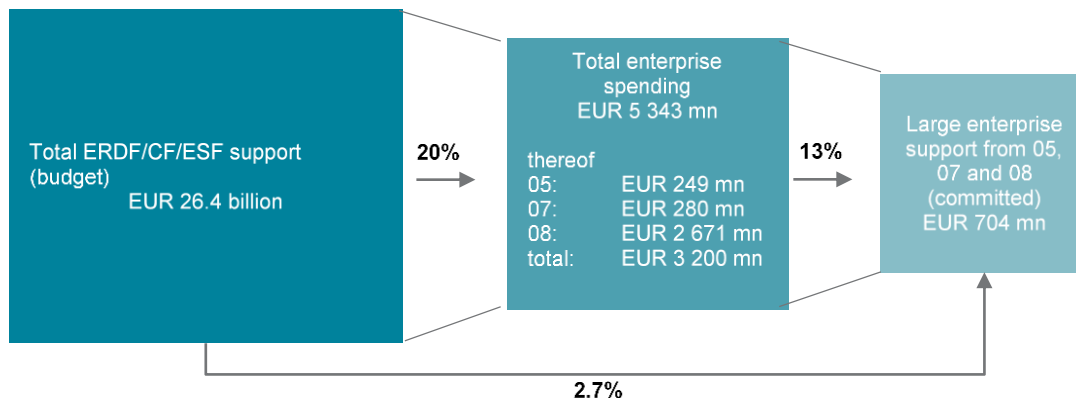


### 3. GERMANY: ERDF OPERATIONAL PROGRAMME THURINGIA 2007-2013

#### Germany

About EUR 26.4 billion of ERDF/CF/ESF funding has been budgeted for Germany in the 2007-2013 programming period. Of the available funds 20% have been committed as direct enterprise support.<sup>19</sup> The central focus of **public support schemes at the national level** is the support of the small and medium sized enterprises with the aim to reduce competitive disadvantages vis-à-vis large companies. However, despite this clear focus on small and medium-sized enterprises, several support schemes do also give aid to large enterprises. In Germany of the total direct enterprise support 13% has been awarded to large enterprises.

**Figure 5: Committed support by relevant expenditure codes and large enterprise status in Germany**



Source: KPMG/Prognos (2015) based on data from Managing Authorities.

In Germany through 704 projects a total of 632 large enterprises have been supported, which corresponds to 2.5%<sup>20</sup> of all large enterprises in Germany. One firm had 1.2 projects on average, which reveals that occasionally a firm was supported multiple times during the programming period. This figure is the lowest among the eight Case Study countries. The average amount of ERDF support per supported large enterprise was EUR 1.1 million, which was well below the average of the eight Case Study countries (EUR 1.6 million).

<sup>19</sup> For this evaluation the analysis of direct enterprise support focuses on the expenditure codes 05 (advanced support services for firms and groups of firms), 07 (investment in firms directly linked to research and innovation), and 08 (other investment in firms) as the core of enterprise spending. If not stated otherwise the term direct enterprise support refers to the activities under these expenditure codes.

<sup>20</sup> Based on the number of active large enterprises that fulfil the employee and turnover criteria.

**Table 7: Key aggregates on the number of projects and supported enterprises by Case Study country**

	Countries								
	ES	DE	PL	CZ	IT	HU	PT	AT	SUM
<b>Number of supported projects</b>	<b>1,269</b>	<b>763</b>	<b>539</b>	<b>520</b>	<b>416</b>	<b>409</b>	<b>407</b>	<b>194</b>	<b>4,517</b>
Number of supported large enterprises	398	632	408	339	270	273	319	148	2,787
Average number of supported projects/large enterprise	3.2	1.2	1.3	1.5	1.5	1.5	1.3	1.3	1.6
Average amount of large enterprise support/enterprise (EUR mn)	0.8	1.1	2.8	1.4	0.9	1.7	3.5	0.9	1.6

Source: KPMG/Prognos (2015), based on Monitoring and information systems of Member States; (DG Regio): AIR2013 ERDF/CF raw database on project selection.

For the 2007-2013 programming period the New Länder (with the exception of Berlin) were all classified as Convergence regions making up the bulk of Structural Funds in Germany. About 60% of the structural funds in Germany has been budgeted to the new Länder and 93% of direct large enterprise support has been committed by the new Länder.

**Figure 6: Committed direct enterprise support to large enterprises by region in Germany**

Source: KPMG/Prognos (2015) based on data from Managing Authorities.

## Thuringia

For the German Case Study the regional ERDF Operational Programme Thuringia 2007-2013 was chosen for further analysis. In the 2007-2013 period, the Free State of Thuringia obtained the fourth-highest allocation of funds per capita in Germany and received a total sum of around EUR 2.1 billion through all Structural Funds.<sup>21</sup> The ERDF Operational Programme Thuringia 2007-2013 accounted for about 28.4% of ERDF spending for direct large enterprise support in Germany.

### Policy and Programme Context

Thuringia as a **Convergence-region** in the 2007-2013 period still faced challenges with regard to its economic performance. Thuringia holds a below-average GDP per capita, low export rate, low R&D expenditure, especially in the business sector, and is characterised by a very low share of large enterprises.

At the **regional level**, regional business promotion in Thuringia is mainly targeting small and medium-sized enterprises. There are around **13 support-schemes<sup>22</sup> which are addressed to enterprises** – with a strong focus on small and medium-sized enterprises. Some schemes are also directly eligible for large enterprises (all of them are co-financed by ERDF-means), particularly direct investment support.

For the Case Study the following three support schemes were analysed. The funding scheme **“Joint scheme for improvement of the regional economic structure”** (GRW) is the most relevant scheme when it comes to investment support in Thuringia. Furthermore, there are also two innovation support schemes which can support large enterprises under specific conditions: The funding scheme **“Promoting the technological development of firms”** and the **guidelines for the support of innovative, technology-orientated joint research projects, networks and clusters**.

**Large enterprise support** in Thuringia was an **explicit objective** manifested in the ERDF Operational Programme 2007-2013; in that Thuringia represents an exceptional case among ERDF programmes in Germany. The **main intention** given for this support was to induce more research and investment activity in large enterprises. Due to the above average share of small and medium sized enterprises in Thuringia, the support of large enterprises was seen to support the development of a more balanced enterprise size structure.<sup>23</sup> Large enterprise support in Thuringia has therefore been linked to and analysed according to the following three Theories of Change.

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<sup>21</sup> Bundesministerium für Wirtschaft und Energie, „EU-Structural support 2007-2013. Distribution of the resources for the objectives “Convergence”, “Phasing-Out” and “Regional Competitiveness and Employment” (in current prices)” available online at: <http://www.bmwi.de/BMWi/Redaktion/PDF/M-O/nsrp-strukturfoerderung-2007-2013,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf>.

<sup>22</sup> These support schemes are promoted and communicated by the Thüringer Aufbaubank (State Investment Bank) which is the central development institution for Thuringia.

<sup>23</sup> A detailed discussion of the policy rationale of large enterprise support can be found in the Second Interim Report of this evaluation.

**Table 8: Main Theories of Change of large enterprise support in Thuringia**

Main focus of the theory	Country-level Theory of Change	Corresponding generalised Theory of Change
Employment	<b>ToC „DE1“</b> Indigenous large enterprise development through direct investment support to increase growth capacities	<b>ToC „LE1“</b> Large-scale business investment
Value chain upgrading	<b>ToC „DE2“</b> Value chain upgrading through expansion of national large enterprises to increase (regional) value creation and knowledge generation	<b>ToC „LE2“</b> Technological upgrading
R&D	<b>ToC „DE3“</b> R&D expansion through foreign large enterprises to enhance regional innovation capacities	<b>ToC „LE4“</b> Investment in R&D capacity

Source: KPMG/Prognos (2015), based on semi-structured interviews with public officials from Thuringia.

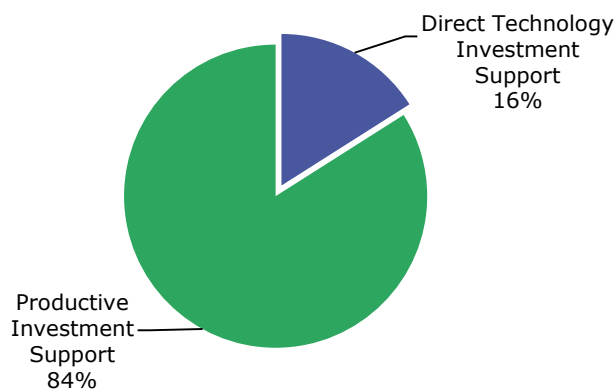
These Theories of Change were the basis for the theory-based impact assessment. The results are summarised towards the end of this chapter.

### Quantification of support to large enterprises

As direct enterprise support from the ERDF Operational Programme Thuringia 2007-2013 **EUR 200.2 million were committed to large enterprises** in 252 projects. Thuringia accounts for about 28.4% of ERDF direct enterprise support for large enterprises in Germany. The average project size in Thuringia is about 795 000 EUR per project, which is below the average project size in Germany (EUR 923 000) and across the selected eight Case Study countries (EUR 1 million).

The support to large enterprises was concentrated on two funding schemes: “direct technology investment support” and “productive investment support”. The focus was clearly on the promotion of productive investments in Thuringia or firms coming to Thuringia. **Productive investment support** (EUR 167.6 million; 157 projects) accounted for 84% of enterprise support spending. The **promotion of technological developments** in large enterprises was supported with EUR 32.6 million allocated to 95 projects. While average projects for technological developments were roughly EUR 0.34 million, productive investment projects were three times as large reaching, on average, slightly more than EUR 1 million from ERDF.

**Figure 7: Distribution between funding schemes of the total ERDF enterprise support expenses to large enterprises in Thuringia**



Source: KPMG/Prognos (2015), based data provided by the Free State of Thuringia, Ministry for Economics, Science and Digital Society 2015.

The form of ERDF large enterprise support was **exclusively non-refundable**.

The characteristics of the supported large enterprises are as follows:

- **178 large enterprises** have been supported.
- The **average amount** of ERDF support has been about **EUR 1.1 million** per supported large enterprise.
- One firm had **1.4 projects on average**. The majority (75%) of the supported firms in Thuringia was supported only once in the funding period.
- The majority of supported large enterprises have **less than 250 employees** at the project site; i.e. they would typically not be classified as large corporations but rather SME. However, through their affiliation to a large corporation or due to annual turnover rates, these firms have characteristics that differentiate them from "typical" SME. They are generally more likely to possess higher investment and management capacities deemed important for innovation and exporting activities.
- The distribution among the industrial classification shows a high **concentration in the manufacturing industry**. More than 90% of the large enterprises have been classified as manufacturing companies, which is even higher than the German average of 66% and the total average of all eight countries of 73%.
- The key recipients of support predominantly represent firms from the high- to medium-technology manufacturing sector. They stem from industries like automotive, analytics and medical engineering, logistics, pump and machinery manufacturing, synthetic material components, and steel processing and technology.
- The **most important company type in Thuringia are domestic multinational corporations** which received more than half of the ERDF funds. Domestic multinational companies account for almost 54% of supported enterprises which is above the average of Germany (48%) and the other Case Study countries (29%).
- Overall, **nearly 80%** of the supported large enterprises in Thuringia have their **headquarters in Germany**, which clearly distinguishes Thuringia from other Case Studies like Hungary where only roughly a third of the supported enterprises have their headquarters in the country.
- Nevertheless, Thuringia was able to attract a number of FDI investments, particularly from Austria, the USA and Canada, and Great Britain. As explained by the public officials this has often been strongly encouraged by ERDF support and, in fact, foreign multinational corporations have received the highest amount of support per project.

**Table 9: Distribution of supported large enterprises in Thuringia by type**

Large enterprise type	ERDF funds		Number of enterprises (incl. multiple support)	
	EUR	%	No.	%
Foreign multinational corporation	42 426 350	21.2	30	16,9
Domestic multinational corporation	119 666 716	59.8	96	53.9
National company	38 155 769	19.1	52	29.2

Source: KPMG/Prognos (2015), based data provided by the Free State of Thuringia, Ministry for Economics, Science and Digital Society 2015.

## Results from the theory-based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialization of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Thuringia has been linked to and analysed according to the following three Theories of Change “LE1: Large-scale business investment”, “LE2: Technological upgrading” and “LE4: Investment in R&D capacity”.

### “LE1: Large-scale business investment”

The intended changes, in particular direct effects, for “**LE1: Large-scale business investment**” widely materialised. For all three companies, the investment project led to an **increase in private investments and production capacities** and all companies **directly created the demand for jobs** (in total around 400). These findings from the ToC-assessment are supported by outcome indicators from the monitoring system. In particular, the induced private investment in physical capital (leverage effect: EUR 4.95 for large enterprises) and the jobs created (around 4,250) provide evidence that from the direct investment support relevant impacts was generated. Interestingly, for two out of the three investigated large enterprises in the ToC-assessment, **ERDF support was one of the most decisive factors for project realisation** (i.e. it was a cause), in both cases referring to the establishment of new plants (one being a new company). These findings, which challenge the current perception of direct investment support (amongst this, Criscuolo et al. 2012)<sup>24</sup>, suggest that ERDF support for LE1 in Thuringia was effective in supporting successful projects and that for deadweight effects to emerge other characteristics of large enterprises than their mere size need to be taken into account.<sup>25</sup>

### “LE2: Technological upgrading”

The assessment of ToC “**LE2: Technological upgrading**” in Thuringia showed that also in the context of technology investment projects the direct intended changes for the supported large enterprises were widely induced. Both large enterprises covered in the mini-case studies were able to increase exports sharply with the implementation of the projects, indicating a direct cause of the projects on the relative export performance. Alongside, several follow-up investments, new cooperation with scientific institutions and business partners were induced and existing collaborative relationships strengthened. However, in both cases **EU support was rather a pre-condition than a cause**; i.e. the firms would have invested also without public support indicating some level of deadweight effects, although company officials in one case indicated that the project would have been implemented at a later date and at a reduced scale.

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<sup>24</sup> Criscuolo, C., Martin, R., Overman, H., and Van Reenen, J. (2012), “The causal effects of an industrial policy”, (No. w17842), *National Bureau of Economic Research*.

<sup>25</sup> These are, in line with Tokila & Haapanen (2012), in particular characteristics of the investment project, location of the subsidised firm and more specific characteristics of this firm (e.g. value chain integration in the region), compare, Tokila, A., and Haapanen, M. (2012), “Evaluation of deadweight spending in regional enterprise financing”, *Regional Studies*, 46(2), 185-201.

Regarding the **demand for quality jobs**, the outcomes are diverse. While technological investment projects can contribute to the creation of quality jobs, in one case it was rather used to safeguard jobs and the transformation of those safeguarded into quality jobs. At the same time, no crowding-out of small and medium-sized enterprises from the labour market was observed as both large enterprises did not report to have direct competitors in the region.

However, it is unclear whether the effects of the supported projects were strong enough to have impact on **regional-economic growth** by a significant extent. Due to the very specific focus of the supported projects (one focusing on the utilisation of by-products, one on highly specialized MEMS processes) regional value creation stemming from direct demand of the supported large enterprises was not observed. Though, in one case a high technology infrastructure (a MEMS centre for the semiconductor industry) was established within the company, which is likely to induce growth effects on this industry cluster in the Jena region.

#### **“LE4: Investment in R&D capacity”**

In the case of **“LE4: Investment in R&D capacity”**, the analysis from two mini case studies showed that in both supported large enterprises the desired direct effects and intermediate outcomes were achieved. R&D activities were intensified and new products developed. Increased technological capabilities led to an **increase in capacity to innovate** and helped to enter new fields like e.g. the field of personal portable radio devices or new diagnostic tests for additional diseases. For both companies the know-how acquired served as a basis for further developments. Mixed evidence was found in the mini case studies on the link between increased competitiveness and the **direct creation of quality jobs**. One relatively young company showed a strong employment growth of about 350 employees in recent years. Support through multiple R&D projects over the funding period helped to continuously finance a base amount of R&D staff directly ensuring quality jobs and triggering general employment growth. Contrary to this, the other company, an employer with tradition at its location, remained at a stable employment level and mainly safeguarded existing jobs with the help of the project. Furthermore, both large enterprises applying for R&D grants were very active already in collaborations and embedded in a comprehensive R&D environment. The evidence gathered therefore cannot confirm that a **visible change in cooperative behaviour** was induced and additional collaborations taken up to a noteworthy degree. Finally, the evidence collected is not strong enough to confirm the feedback loop between knowledge spillovers in small and medium-sized enterprises in the region and an increased capacity for regional innovation.

The **assessment of the causal relationship** revealed that the grants for assets, technology and wages were only a **pre-condition** (instead of a cause) for project implementation for both large enterprises. Although in one case the supported project would have been implemented at the location in any case, its implementation would have taken much more time due to resource constraints. In the other case of a foreign owned large enterprise subsidiary, EU funding was perceived as a decisive argument and a pre-condition for getting the project approved by the parent company.

For both ToC-assessments in Thuringia, i.e. the assessment of **“LE2: Technological upgrading”** and **“LE4: Investment in R&D capacity”**, the question is arising about the **extent to which this public support has substituted private technology or R&D investments** respectively. As has been stated above, all supported large enterprises were able to increase their technological capabilities through the implementation of the

ERDF funded projects and in most cases EU funds were a pre-condition rather than the cause for project implementation. This indicates that there exists a relatively strong complementarity between EU funds and private investments in technology / R&D – a finding much in line with a meta-evaluation by Garcia-Quevado (2004)<sup>26</sup> and results by Guellec and van Pottelsberghe de la Potterie (2003).<sup>27</sup>

## Conclusion

**Large enterprise support in Thuringia was an explicit objective** manifested in the ERDF Operational Programme 2007-2013. Overall, **over EUR 200 million ERDF support** were handed out to large enterprises, 84% of which was on productive investment support (i.e. “LE1: Large-scale business investment”). Only 16% remained for the promotion of technological developments, including both “LE2: Technological upgrading” and “LE4: Investment in R&D capacity”.

Overall for the three Theories of Change under analysis most of the intended changes of the supported large enterprise projects materialized to some extent or even to a substantial extent, as Table 10 shows. The effects of the supported projects on investment and employment were considered especially strong for “LE1: Large-scale business investment”, which is in line with the main objectives of the underlying funding scheme of supporting investments contributing to employment creation. Whereas the supported projects in general showed the expected effects, the causal link between support and project implementation was found to be in most cases rather a pre-condition than a cause.

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<sup>26</sup> Garcia-Quevado, J. (2004), “Do public subsidies complement business R&D? A meta-analysis of the econometric evidence”, *Kylos* 57, pp.87-102.

<sup>27</sup> Guellec, D., and Van Pottelsberghe De La Potterie, B. (2003), “The impact of public R&D expenditure on business R&D”, *Economics of innovation and new technology*, 12(3), 225-243.



**Table 10: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Thuringia**

OUTCOME DIMENSIONS	LE1*	LE2*	LE4*
<b>Effectiveness of support</b>	+++	++	++
• <i>investment</i>	+++	++	++
• <i>productivity</i>	++	++	+
• <i>employment</i>	+++	+	++
<b>Wider benefits</b>	++	+	+
<b>Sustainability</b>	++	++	++
<b>Contribution of large enterprise support to the general economic health of the region &amp; small and medium-sized enterprise base</b>	++	++	++

\* Effects: Substantial (+++), Some (++), Little (+) and None (0)

The colour coding represents the "Strength of the evidence chain" that describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).

Source: KPMG/Prognos (2015).

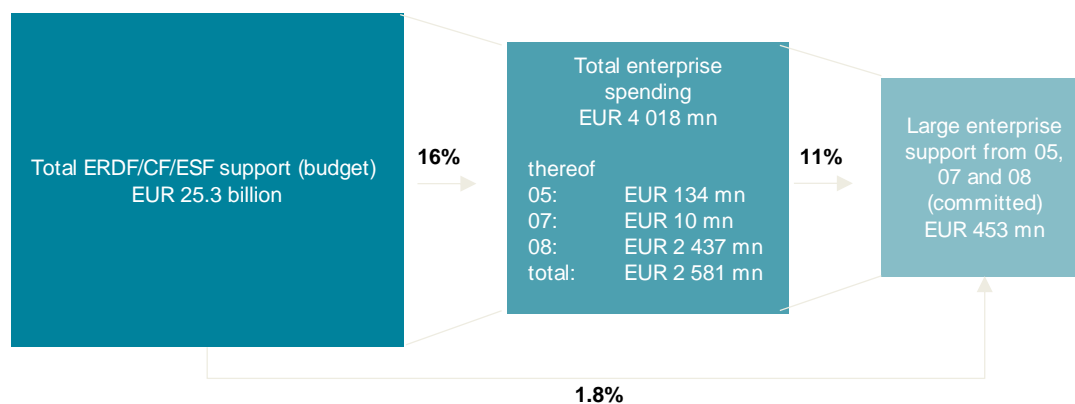
The assessment of the general outcomes of large enterprise support shows that the **induced investment of large enterprises** accumulated to EUR 1 005 million, and in that to a lower absolute level to compared to EUR 1 265 million in SMEs. When looking at the investment induced per project, however, a contrary finding emerges: while the induced investment per project per small and medium-sized enterprises is only EUR 0.38 million, large enterprises reach a volume of EUR 4.83 million – i.e. an amount larger by a factor twelve. A similar pattern emerged when looking at the **number of jobs created**: of the 8 456 jobs created for the whole Operational Programme in Thuringia, roughly 50% were created by large enterprises. In addition, however, our estimation shows that the efficiency of support in terms of costs (ERDF support) of one job created was much higher for large enterprises: while around EUR 72 500 were needed of one job created in small and medium-sized enterprises, only EUR 47 000 was calculated for large enterprises.

#### 4. HUNGARY: ECONOMIC DEVELOPMENT OPERATIONAL PROGRAMME 2007-2013

More than EUR 25 billion of ERDF/CF/ESF funding has been budgeted for Hungary in the 2007-2013 programming period. The total committed amount at the end of 2013 was EUR 27 billion (with a slight over commitment).

16% of the budget has been accounted as **enterprise spending, from which 11% has been awarded to large enterprises** resulting in a 1.8% share of total large enterprise support from the whole budget in Hungary.

**Figure 8: Committed support by relevant expenditure codes and large enterprise status in Hungary**



Source: KPMG/Prognos (2015), based on data from Managing Authorities.

In Hungary through 409 projects a total of 273 large enterprises have been supported. One firm had 1.5 projects on average, which reveals that occasionally a firm was supported multiple times during the programming period. This figure is average among the eight case study countries. The average amount of ERDF support per supported large enterprise was EUR 1.7 million, which corresponds to the average of the eight case study countries (EUR 1.6 million).

**Table 11: Key aggregates on the number of projects and supported enterprises by case study country**

	Countries								
	ES	DE	PL	CZ	IT	HU	PT	AT	SUM
<b>Number of supported projects</b>	<b>1,269</b>	<b>763</b>	<b>539</b>	<b>520</b>	<b>416</b>	<b>409</b>	<b>407</b>	<b>194</b>	<b>4,517</b>
Number of supported large enterprises	398	632	408	339	270	273	319	148	2,787
Average number of supported projects / large enterprise	3.2	1.2	1.3	1.5	1.5	1.5	1.3	1.3	1.6
Average amount of large enterprise support / enterprise (EUR mn)	0.8	1.1	2.8	1.4	0.9	1.7	3.5	0.9	1.6

Source: KPMG/Prognos (2015), based on Monitoring and information systems of Member States; (DG Regio): AIR2013 ERDF/CF raw database on project selection.

The Hungarian case study focuses on the **Economic Development Operational Programme 2007-2013**, which accounted for more than **80% of the support towards large enterprises** in Hungary.

### Policy and Programme context

One of the main drivers of large enterprise support in the country between 2007 and 2013 was the uneven economic development of the Hungarian regions. GDP in PPS was 61% of the EU-28 average in 2007<sup>28</sup>. Most of the large and medium-sized enterprises were located in and around Budapest (Central Hungary) and along motorway 'M1', which connects Budapest, Győr and Vienna, and is the main gateway to Western Europe. In the rest of the regions, economic activity of larger firms was significantly lower.

This **economic disparity between Central Hungary and other regions can be observed almost in case of all economic indicators**: employment, wage levels, R&D activity; resulting in high difference regarding the quality of life. This difference is even more apparent in the level of micro-regions: 33 economically most disadvantaged micro-regions were defined, characterised by low economic activity, thus few job opportunities and a high share of economically inactive population.

Enterprise policy has long been largely dependent on Cohesion Policy programmes: Hungary received **EUR 22.4 billion support in the 2007-2013 programming period**, which equals to approximately 3% of national GDP, and to 15% of the gross capital formation in the same period. More than 10% of the funds, EUR 2.9 billion has been allocated to the Economic Development Operational Programme, which is 0.4% of the Hungarian GDP in the whole programming period.

The national enterprise policy involves an investment incentive system providing both cash and non-cash subsidies. Beyond Cohesion Policy programmes, national enterprise policy applies the following tools: Individual Government Decisions programme (financed from the government's investment promotion fund); non-refundable support for investment projects in economically disadvantaged micro-regions (financed from several regional development funds handled by the government); non-refundable support for job creation (financed from the National Employment Fund and the Labour Market Fund).

<sup>28</sup> Eurostat, Annual National Accounts, GDP per capita in PPS, 2007

Large enterprise support was expected to increase employment and to promote economic growth with a view to decreasing regional disparities (in particular, by way of realising indirect benefits for the small and medium-sized enterprises), and to stimulate R&D activities.

The main stated objective of the Economic Development Operational Programme 2007-2013 was to “encourage permanent growth of the Hungarian economy by strengthening the competitiveness of the production sector”. Under this broad aim, the programme set out the following objectives and corresponding priority axes:

**Table 12: Objectives of Economic Development Operational Programme 2007-2013 Hungary**

Objective	Priority axis
to increase R&D and innovation capacity and activities of enterprises, as well as R&D co-operations	<b>1:</b> R&D and innovation for competitiveness
to develop the technology and procedures of enterprises, in order to increase employment, value added, productivity and export level	<b>2:</b> Complex development of enterprises (focusing on small and medium-sized enterprises)
to develop the business environment that supports economic growth and the performance of enterprises	<b>3:</b> Improvement of modern business environment
to facilitate the access of small and medium-sized enterprises to financing	<b>4:</b> Financial instruments (focusing on small and medium-sized enterprises)

Source: KPMG/Prognos (2015).

The Economic Development Operational Programme had a strong focus on small and medium-sized enterprises (81% of total ERDF commitment under the expenditure codes 05, 07 and 08). Nevertheless, **under priority axes 1-3, several calls for proposals were available for large enterprises** (under priority axis 4, large enterprises were not allowed to apply for refundable support). **In general, large enterprise support was considered a tool to indirectly support small and medium-sized enterprises<sup>29</sup>. An implicit objective of large enterprise support was, however, to increase employment.**

### Quantification of support to large enterprises

**EUR 386 million** ERDF funding was committed to the **338 supported large enterprise projects** within the four relevant measures of the programme. The average project size was EUR 1.14 million which corresponds to the average EUR 1 million of the eight case study countries.

<sup>29</sup> The original text of the Operational Programme states this intention: ‘Support of large companies greatly contributes to the development of the small and medium-sized enterprise sector through the multiplier effect (indirect effect of employment, connections with suppliers, and dissemination of best practices)’.

**Table 13: ERDF support to large enterprises, total value & number of supported projects within the Economic Development Operational Programme by relevant measures**

Name of measure	Theory of Change (national - generalised)	ERDF committed support (EUR million)	Total project value (EUR million)	Number of supported projects
1.2. Support of innovation clusters and innovation/technology parks	LE4	31	77	6
1.3. Encouragement of the independent innovation and R&D activities of the enterprises	LE4	2	8	9
2.1. Technology upgrade of the enterprises	LE1	335	1,760	297
3.2. Development of logistics centres	-	18	58	26
<b>Total</b>		<b>386</b>	<b>1,903</b>	<b>338</b>

Source: KPMG/Prognos (2015) based on EMIR query (monitoring system).

The form of support was **exclusively non-refundable**. Refundable support was kept for small and medium-sized enterprises, for which the gap analysis identified market failures that were to be addressed.

The aid intensity of the supported large enterprise projects within the Economic Development Operational Programme averaged at 24%, which is the mid-range compared to the average of the eight case study countries. This induced **EUR 1.9 billion total investment**.

Non-financial packages of support were available: large-scale investments to promote employment ("LE1") could benefit from communication and application management at the Managing Authority and the Intermediate Body as part of the support scheme.

The project selection mechanism did not generate competition in terms of undertakings once the applicant has fulfilled the minimum requirements (e.g. number of new jobs created). However, it has **enabled large enterprises to count on EU-support** even before the application, already during the stage of the investment planning. Such packages were, however, **not available** for smaller-sized, typically **domestic large firms**.

The characteristics of supported large enterprises are as follows:

- **234 large enterprises** have been supported from the programme.
- The average amount of ERDF support was **EUR 1.65 million** per large enterprise.
- Large enterprises implemented 1.44 projects on average: nearly **every second company applied successfully twice** in the programming period. The main cause for repeated support is that large enterprises, especially those with more than 1,000 employees, often **split their investment projects** and implemented them consecutively.
- Manufacturing companies, especially from the high- and medium-high-technology cluster, are typical examples for implementing multiple projects. This group involves a large share of the **foreign direct investments of the largest multinational firms**, primarily in the electronics and automotive sectors.
- The **majority** of supported large firms **are foreign multinationals (70%)**. This share is high compared to the average 31% share in the eight countries.

- As a consequence, 40% of the supported Hungarian large enterprises are high- and medium-high technology firms. The share of service providers is relatively low, amounting to 15%.

**Figure 9: Average project size and average number of projects per large enterprises by employment categories**

Employment category	Number of supported large enterprises	Average project size (m EUR)	Average number of projects per large enterprise
0-249	84	3.9	1.1
250-499	55	4.9	1.3
500-999	45	5.9	1.7
Over 1000	44	8.3	1.8
<b>Total (without n/a)</b>	228	5.7	1.4

Source: KPMG/Prognos (2015) based on Monitoring and Information System (EMIR), company database (Opten).

As regards FDI, the programme provided targeted support to large, strategic firms, even though it was not explicitly stated in the programme documents (only that projects had to exceed EUR 5 million).

Apart from FDI, the programme has not supported any targeted group of large enterprises. Moreover, it has **not explicitly stated any support for large enterprises** at all. Theoretically, small and medium-sized enterprises could apply to all calls for proposals. Implicitly, however, enterprise support measures under priority axis 2 applied **“families” of calls for proposal conditioned to project size**, with minimum and maximum support values (e.g. 2.1.1.“A” for small projects, “B” for medium-sized projects, “C” for large projects). In such a system, large enterprises could easily identify funding opportunities.

Although a sectoral focus has not been explicitly stated, projects by manufacturing companies were more likely to meet the objectives of the Economic Development Operational Programme. Complex development of enterprises has targeted to develop technology-intensive activities and establish high value added production.

In pursuing the above programme objectives and addressing the key problems of Hungary, the relevant **Theories of Change** related to the support of **large enterprises** are summarised in the following table (theories are introduced in detail in the Methodology section of the report).

**Table 14: Main Theories of Change of large enterprise support (EDOP, Hungary)**

Underlying socio-economic problem	Focus of the theory	Corresponding generalised Theory of Change
High unemployment and underdeveloped economy in convergence regions	<i>Employment</i>	"LE1: Large-scale business investment"
Stagnating economy in the least developed micro regions	<i>Employment</i>	"LE1: Large-scale business investment"
Low level of R&D expenditures, weak R&D co-operation in convergence regions	<i>R&amp;D</i>	"LE4: Investment in R&D capacity"
Underdeveloped economy in convergence regions	<i>Indirect small and medium-sized enterprise support</i>	Not included in the generalised theories

Source: KPMG/Prognos (2015).

### Results from theory based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialization of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Hungary has been linked to and analysed according to the following two Theories of Change "LE1: Large-scale business investment" and "LE4: Investment in R&D capacity".

#### "LE1: Large-scale business investment"

The theory represents **EUR 260 million** of public support committed to **170 projects**. The theory has set increase of employment in the programme area as the main intended change, through a set of logical steps. Although the theory materialised overall, the shape of the logical chain has been only partially modified.

The theory has successfully attracted both FDI and domestic firms to the programme, and the supported **projects have been successful** in increasing employment in the programme area. Nevertheless, results can only be **partially attributed to the programme** whilst funding was a **pre-condition**, and not the main cause of the implemented projects.

Mini case studies revealed that large multinational companies made their **investment choices on a strategic basis**. These were influenced by other factors such as low wages, tax breaks and other financial and non-financial benefits. Nevertheless, EU funding was effective in **influencing the location choice of FDI** within Central and Eastern Europe.

Based on the interviews in the mini case studies it can be concluded that companies participating in the programme created **demand for jobs** at the local level, mainly involving skilled or unskilled physical work in manufacturing, or administrative

responsibilities. Indicators proved that around 22 thousand jobs have been created by the companies receiving large enterprise support, however the Managing Authority supposed, only 9,000 are directly attributable to the programme. Projects, besides creation of demand for jobs, have been assessed to have an impact on labour market in an indirect way, mainly influencing improved working conditions, flexibility and job security.

As the increase of production and productivity were the main drivers for companies in the implementation of their projects, positive effects on increased cost-efficiency and increased production levels were usually achieved.

**Indirect effects and wider benefits varied a lot** among the projects. The FDI mini case study and the interview with the Intermediate Body revealed that large multinational enterprises tend to use their own suppliers even from other countries instead of using local suppliers due to problems with quality and the quantity of products suppliers are able to provide, and cultural considerations. In this respect, the theory consequently overestimated the effects on local suppliers. In the case of domestic enterprises on the other hand, due to the embeddedness of the domestic companies in the region, projects have resulted in positive effects, increased production has resulted in direct benefits for local small and medium sized suppliers. Concerning social impacts, the FDI project was viewed to induce the development of education system, cultural amenities, and spread of improved working culture. However, it is important to note that these are results of the projects and not the EU funds themselves, thus the contribution of EU support to the indirect benefits has to be handled with limitations. Overall, wider benefits primarily depended on the size and characteristics of the company and the development level of the local economy.

Based on the outcomes of the interviews with company officials, the majority of projects were assessed to **have the potential for long-term sustainability**, mainly deriving from the embeddedness of companies in both local society and economy. However, it is important to note that the opinion of the Managing Authority is contradicted by the findings from literature and press releases from the last decade, which tend to question this potential.

#### **“LE4: Investment in R&D capacity”**

The theory shows that the EU funds were in causal relationship with the timing and the location choice of the R&D investments.

As companies applying for R&D support include innovation as a major element of their long-term strategies, EU support served as an **incentive for the investment**, rather than a main cause. Mini case studies revealed that strategic decisions are made at group / parent company level, which are complemented by the EU support in the majority of the cases.

The direct effects induced by the programme were revealed to be industry specific and varied across case studies and in the opinion of the authorities. Company case studies highlighted that projects were moderately successful in generating demand for quality jobs in the programme area. The 6 projects created **422 jobs overall**, out of which only 13 were quality jobs explicitly related to research activities. The projects in general are viewed to be followed by further investments, although evidence was limited to support this finding.



The programme indirectly contributed to the **regional development of education**, and improvement of **human capital base** in the affected cities. However, as supported companies continuously develop their innovative capacities and invest in educational activities connected to their sector, outcomes cannot be fully attributed to the programme.

The improvement in **production levels and productivity** were not the main objectives of the support and are **not yet visible**. Sustainability of projects can only be judged for the medium-term, as long-term sustainability not only depends on company strategy, but also on global trends and industries.

Overall, **deadweight** at EU level is **significant**, the projects are most likely to have been implemented without support, most probably at different locations and with different timing.

The following table provides an overview of the contribution of large enterprise support based on the triangulated evidence collected within this case study, with reference to the strength of the evidence chain.

## Conclusion

Between 2007 and 2013, **EUR 386 million ERDF** funding was committed to **338 supported large enterprise projects** within the four relevant measures of the programme, in the form of exclusively non-refundable support. Enterprise policy in Hungary identified uneven regional development, labour market related problems such as high unemployment rates, low-level of R&D expenditure and lack of innovation capacity to be the key challenges of the Hungarian economy. The ERDF support directed to large enterprises was expected to mitigate these challenges by increasing employment, promoting economic growth, and stimulating R&D activities in convergence regions.

Based on the above assessment and the triangulated evidence collected within the programme case study, the following table provides an overview of the effects of supported large enterprise projects on the intended change set out in the country relevant theories.

**Table 15: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Hungary**

OUTCOME DIMENSIONS	LE1*	LE4*
<b>Effectiveness of support</b>	++	++
• <i>investment</i>	++	++
• <i>productivity</i>	++	0
• <i>employment</i>	+++	+
<b>Wider benefits</b>	++	++
<b>Sustainability</b>	++	++
<b>Contribution of large enterprise support to the general economic health of the region &amp; small and medium-sized enterprise base</b>	++	+

\* Effects: Substantial (+++), Some (++), Little (+) and None (0)

*"Strength of the evidence chain" describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).*

Source: KPMG/Prognos (2015).

Evidence shows that the large-scale business investments of firms were led by the companies' strategies, EU funds influenced the scale and timing of the projects. The funding was a pre-condition, and not the main cause of the implemented projects, the outcomes can only be partially attributed to the programme.

For the investments in R&D capacity EU funds were considered as important factors of project implementation; however, the two company case studies conducted revealed that the location choices of the enterprises were primarily driven by business rationale. EU funds strengthened more the strategic decision-making of the company rather than determining location choice. In the case of the domestic enterprise already present in the region, without the project, the investment in modernisation would have been implemented in 5-6 years which would have meant a loss of market shares for the company.

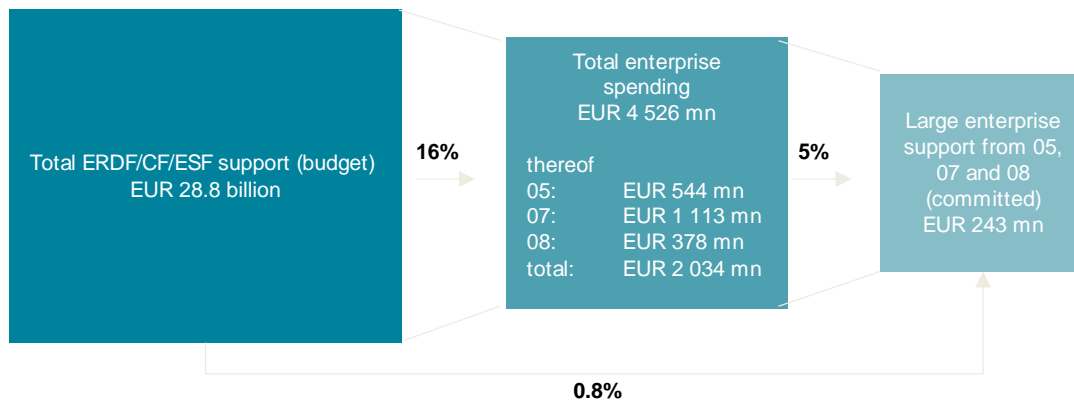
The assessment of the general outcomes shows that the theories were successful. The effectiveness of the support, the wider benefits and the expected sustainability were adequate. However, in case of "LE4" the contribution to the general economic health of the region and to the small and medium-sized enterprise base was little.

## 5. ITALY: ERDF NATIONAL OPERATIONAL PROGRAMME FOR RESEARCH AND COMPETITIVENESS 2007-2013

Nearly EUR 29 billion of ERDF/ESF funding has been budgeted for Italy in the 2007-2013 programming period. According to the latest validated data as of 31/12/2013, the total ERDF committed amount was around EUR 20.6 billion.

Around 16% of the budget and approximately **22%** of the total committed ERDF support has been committed **as enterprise spending**, from which EUR 243 million have been awarded to large enterprises, resulting in a **0.8% share of large enterprise support** (relevant expenditure codes) from the total budget in Italy.

**Figure 10: Committed support by relevant expenditure codes and large enterprise status in Italy**



Source: KPMG/Prognos (2015) based on data from Managing Authorities.

In Italy through 416 projects a total of 270 large enterprises have been supported. One firm had 1.5 projects on average, which reveals that occasionally a firm was supported multiple times during the programming period. This figure is average among the eight case study countries. The average amount of ERDF support per supported large enterprise was EUR 0.9 million, which is below average of the eight case study countries (EUR 1.6 million).

**Table 16: Key aggregates on the number of projects and supported enterprises by case study country**

	Countries								
	ES	DE	PL	CZ	IT	HU	PT	AT	SUM
<b>Number of supported projects</b>	<b>1,269</b>	<b>763</b>	<b>539</b>	<b>520</b>	<b>416</b>	<b>409</b>	<b>407</b>	<b>194</b>	<b>4,517</b>
Number of supported large enterprises	398	632	408	339	270	273	319	148	2,787
Average number of supported projects / large enterprise	3.2	1.2	1.3	1.5	1.5	1.5	1.3	1.3	1.6
Average amount of large enterprise support / enterprise (EUR mn)	0.8	1.1	2.8	1.4	0.9	1.7	3.5	0.9	1.6

Source: KPMG/Prognos (2015), based on Monitoring and information systems of Member States; (DG Regio): AIR2013 ERDF/CF raw database on project selection.

The Italian case study focuses on the National Operational Programme for Research and Competitiveness 2007-2013, which accounted **87% of the support towards large enterprises** in Italy.

### Policy and Programme context

Strong regional disparities in Italy are still remaining, resulting in the concentration of convergence regions with low economic activity in the South. For Italy, the GDP in PPS was 105% of the EU-28 average in 2007, amounting to PPS 26,200. However, there was large difference in terms of GDP between the regions under the competitiveness objective (regions in the Centre and North of Italy) those under the convergence objective (Southern regions).

This economic disparity between the Centre and North, and the Southern regions can be observed in case of all development indicators: employment, wage levels, R&D activity.

Overall, large enterprises play a significant role for Italian exports. In particular, large enterprises from the manufacturing sector closely integrate Italian small and medium-sized enterprises, which have been able to develop relevant production capacities over the last years<sup>30</sup>, in their value chain and are traditionally **export-oriented**. As a consequence, these small and medium-sized enterprises depend on the long-term economic performance of these large firms to a large extent.

When looking on incoming investments, on the other hand, compared to other European countries, **Italy attracts relatively little FDI**. Currently the export activity of Italian multinationals is far more significant than incoming FDI in terms of overall economic performance.

**Supporting large firms** in general has been high on the political agenda in the period 2007-2013. During the course of the funding period, supporting large firms received even more attention by policy makers. In fact, large enterprise support was considered a **key**

30 Mignone, Mario B. (2008) "Italy today: Facing the Challenges of the New Millennium" New York: Lang Publishing, pp. 161-162.

**tool to mitigate the impact of the financial and economic crisis**, in particular by supporting large firms in retaining their employment levels.<sup>31</sup>

European funds played a significant role in this context but also as an overall source of funding structural and cohesion policy in Italy. In the 2007-2013 period, Italy received almost **EUR 29 billion in European funds**.<sup>32</sup> The **convergence regions** (Campania, Puglia, Calabria and Sicily) were the **main recipients** of the funds allocated by Cohesion Policy and EU funds, where direct enterprise support, including that of large enterprises, were seen as an important means of economic development.

Overall, also investments in R&D and innovation constituted the bulk of investments in Italian Operational Programmes. Italy had allocated EUR 9.6 billion for this field, in particular through the "Research and Competitiveness Programme". Moreover, all of the 21 regional ERDF programmes covered R&D investments.

Finally, also FDI policy was meant to represent an important segment of Italy's enterprise policy. According to the Ministry of Foreign Affairs, "**attracting FDI** is a **crucial** factor in the economic and social development of a country, in addition to being one of the priorities of the economic and industrial agenda". In fact, the national and regional authorities have defined a number of incentives to attract capital to the region, within the limit of the community provisions on State Aid. These were in particular financial incentives and tax reliefs.

This National Operational Programme for Research and Competitiveness was meant to contribute to the economic cohesion of Italy's least developed regions. In view of this aim, a significant part of Structural Funds were allocated to develop research and innovation in the four convergence objective regions: Puglia, Calabria, Sicily and Campania.

The programme aimed at creating and exploiting the research, development and innovation potential in these regions in order to create a basis for long-lasting and sustainable development. In order to achieve this goal, the programme set out the following objectives and corresponding priority axes:

**Table 17: Objectives of National Operational Programme for Research and Competitiveness 2007-2013 Italy**

Objective	Priority axis
to change specialised production in the convergence regions by promoting the development and consolidation of sectors relating to science and technology	<b>1:</b> Support for structural changes and scientific & technological improvement for a transition towards a knowledge economy
to increase the ability of local business to adapt their strategies to changes in the business context	<b>2:</b> Improvement of the innovative context for the development of competitiveness

Source: KPMG/Prognos (2015).

31 Di Quirico, R. (2010) "Italy and the Global Economic Crisis", Bulletin of Italian Politic Vol. 2, No. 2, 2010, pp 3-19

32 In total, Italy has defined 66 programmes: 19 Programmes for the convergence objective, of which ten programmes are managed regionally, seven nationally managed and two interregional programmes; 33 Programmes for the objective of regional competitiveness and employment (32 programmes managed at the regional level and a programme management at national level); 14 Programmes for the objective European territorial cooperation.

Under these priority axes, **eleven calls for proposal were available for large enterprises.**

In pursuing the programme objectives and addressing the key problems of Italy, the relevant **Theories of Change** related to the support of **large enterprises** are summarised in the following table (theories are introduced in detail in the Methodology section of the report).

**Tab"18: Main Theories of Change of large enterprise support (NOP R&D, Italy)**

Underlying socio-economic problem	Focus of the theory	Corresponding generalised Theory of Change
High unemployment and underdeveloped economy in Southern convergence regions	<i>Creation of / Sustaining Employment</i>	"LE1: Large-scale business investment"
Underdeveloped economy in the Southern convergence regions	<i>Technological modernisation</i>	"LE2: Technological upgrading"
Low level of R&D expenditures, high potential in R&D support in Southern regions	<i>Innovation, R&amp;D</i>	"LE3: Innovation support"

Source: KPMG/Prognos (2015)

### Quantification of support to large enterprises

**EUR 157 million** ERDF funding was committed to the **150 supported large enterprise projects** within the two priority axis of the programme. The average project size was EUR 1 million which corresponds to the average EUR 1 million of the eight case study countries.

**Table 19: ERDF support to large enterprises, total value and number of supported projects within the Research and Competitiveness Operational Programme by relevant measures**

Name of measure	ERDF committed support (EUR million)	Total project value (EUR million)	Number of supported projects
II.1 - Strengthening of the production system	119	724	109
I.2 - Technological-productive areas for the competitiveness of system	38 <sup>33</sup>	204	41
<b>Total</b>	<b>157</b>	<b>927</b>	<b>150</b>

Source: KPMG/Prognos (2015) based on programme monitoring data.

The form of support was **both non-refundable and refundable support**. Beneficiaries of the programme often presented a **single investment plan**, including both refundable and non-refundable support. However, according to the COCOF Note 10-0014-05, financial engineering funds had to be managed and monitored as separate projects. Therefore, the refundable and the non-refundable parts of the investment plan are considered in this document as two "projects", even though they belonged to the same investment plan. Considering both the refundable and non-refundable support together,

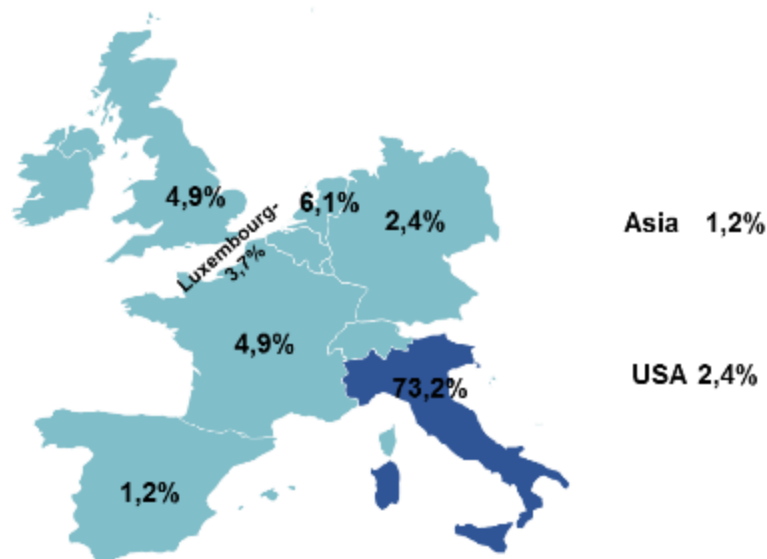
33 Please note that 1 project, for a committed amount of 3.2 million had been cancelled after commitment. This project is included in the analysis as present data focus on commitments up to 31/12/2013.

the number of **investment plans is 121** (corresponding to 150 projects), of which only 56 received payments as of December 3<sup>rd</sup> 2013.

The characteristics of supported large enterprises are as follows:

- In total, **82 large enterprises** have been supported from the programme.
- The average amount of ERDF support was **EUR 1.9 million per large enterprise**, which is higher than the average EUR 1.6 million in the eight case study countries.
- Taking into account the fact that there are 121 investments plans in total (including both refundable and non-refundable support in a single plan), the average number of projects per large enterprise is slightly lower reaching **1.5 projects on average**, which corresponds to the average 1.6 projects in the eight case study countries.
- Nearly **49%** of the large enterprises employ **less than 250 people**, which is higher than the average 43% in the eight case study countries. On the other hand, **21%** employ **more than 1.000 people**, which is significantly higher than the 13% average of the eight case study countries.
- **73%** of supported large enterprises were **headquartered in Italy**: small share of the enterprises were foreign multinationals (27%). The 73% share of domestic supported companies is even higher than the average 69% of the eight case study countries.

**Figure 11: Distribution of countries of origin among companies supported from the Research and Competitiveness Operational Programme**



Source: KPMG/Prognos (2015), based on company databases and publicly available information on the supported firms.

Despite the strong (political) focus and articulated relevance of attracting FDI to Italy, no investments in the database of supported projects could be identified that qualified as new foreign direct investment. In fact, support from this specific OP has predominantly focused on **firms already present in the region**. However, these relatively low figures on "new" FDI projects need to be put into context. On the one hand, the OP studied here under the specific spending codes, focuses primarily on technology and R&D-

investments. Thus, **FDI-attracting measures are not major building blocks of the OP** and the specific measures analysed here typically do not represent entry-point projects of foreign investors

### Results from theory based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialisation of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Italy has been linked to and analysed according to the following three Theories of Change “LE1: Large-scale business investment”, “LE2: Technological upgrading” and “LE3: Innovation support”.

#### “LE1: Large-scale business investment”

The theory “LE1” has been **successful in stimulating large firms to participate in the programme and implement projects** in the convergence region. However, the non-refundable support was a pre-condition, rather than a cause of the implemented project. The impact on the region’s economy can only be partially attributed to the programme.

Most firms under this theory have achieved the increase in production and productivity. In addition, large firms have **managed to create a significant number** of jobs in the programme areas. Due to low aid intensity, the levels of private investments generated were significant.

Regarding any indirect and wider benefits, **spillover to local small and medium-sized enterprises** (through the induced economic activity) was noted. Moreover, increased demand for quality (non-physical) jobs has been observed for some of the projects (indirect and wider benefits have varied a lot across projects). Since the support focused on supporting domestic large enterprises and foreign firms already operating in the region, the large firms’ activities **seem sustainable** at this point in time.

#### “LE2: Technological upgrading”

Under the theory “LE2”, projects were primarily driven by business needs and the funds played rather a **supporting role in the process than being the main cause**.

The implemented projects were much smaller in size than for “LE1”. Employment, sales and investment have grown at the supported firms to some extent; however, these changes were not necessarily attributed to programme support. The growth of productivity was achieved for most of the supported firms. **Spillover effects to small and medium-sized enterprises were observed**, however only to a moderate extent. The funds have typically supported the upgrade of existing operations, the benefits of which are **sustainable** after the compulsory maintenance period.

#### “LE3: Innovation support”

The theory “LE3” has supported innovative projects in the convergence regions. A causal relationship between EU funds and large enterprise projects could be identified regarding **the timing and the location choice** of the innovation investments. However, the



overall role of the funds was rather a **pre-condition** than a cause for the investment. The innovation efforts of these large enterprises were strongly strategy driven, which were influenced by long-term global priorities rather than the terms and conditions of the support.

Strong positive impacts were concluded in terms of **additional investment and production**. However, the counterfactual impact evaluations presented mixed results regarding the increase in R&D spending, sales and profitability. Impacts on the local suppliers and on the local labour markets have been significant for the supported investments. Both qualitative and quantitative evidence underline a sufficient sustainability of the implemented projects and intended results in the particular region.

## Conclusion

The following table provides an overview of the contribution of large enterprise support based on the triangulated evidence collected within the programme case study, with reference to the strength of the evidence chain.

**Table 20: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Italy**

OUTCOME DIMENSIONS	LE1*	LE2*	LE3*
<b>Effectiveness of support</b>	++	++	++
• <i>investment</i>	+++	+	++
• <i>productivity</i>	+++	++	++
• <i>employment</i>	++	++	++
<b>Wider benefits</b>	+	+	++
<b>Sustainability</b>	++	++	++
<b>Contribution of large enterprise support to the general economic health of the region &amp; small and medium-sized enterprise base</b>	++	+	++

\* *Effects: Substantial (+++), Some (++)*, Little (+) and None (0)

"Strength of the evidence chain" describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).

Source: KPMG/Prognos (2015).

Large-scale investment projects show that support was a cause and not the main cause of the implemented projects. In two cases investment projects would have been smaller / at a lower scale and / or would have been implemented later without EU funds. In the case of technological upgrading, both the qualitative assessment (company case studies) and quantitative evaluations (counterfactuals) find no causal link between EU support and project implementation. EU support in case of this theory is mainly seen as a supporting factor: projects would be implemented anyhow as part of regular investment cycles. In the case of innovation support, overall, the availability of EU funds has been considered as pre-condition for project implementation.

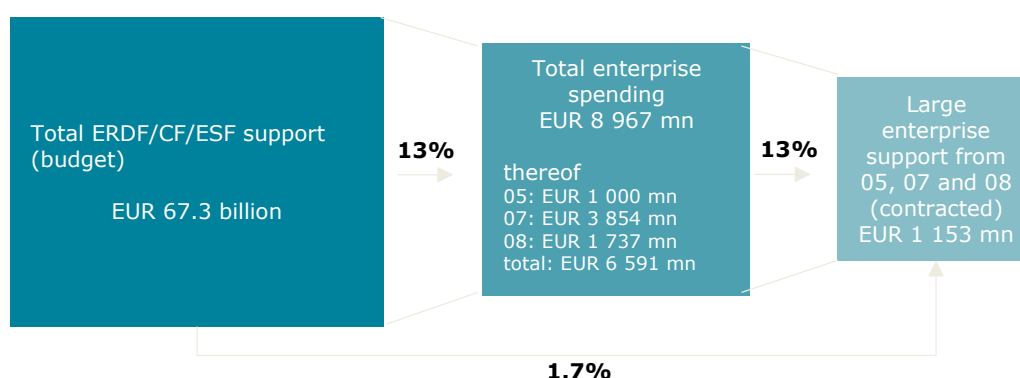
The assessment of the general outcomes shows that the effectiveness of the support and the sustainability of the projects were adequate. On the other hand, wider benefits

materialised only to a little extent in case of LE1 and LE2. The support for technological upgrading showed very little contribution to the general economic health of the region and to the small and medium-sized enterprise base.

## 6. POLAND: ERDF OPERATIONAL PROGRAMME INNOVATIVE ECONOMY 2007-2013

More than EUR 67 billion of ERDF/CF/ESF funding has been budgeted for Poland in the 2007-2013 programming period. The total contracted amount at the end of 2013 was almost EUR 1.2 billion.

**13%** of the budget has been accounted as **enterprise spending**, from which 13% has been awarded to large enterprises, resulting in a **1.7% share of total large enterprise support** from the whole budget in Poland.



**Figure: EU support by relevant expenditure codes and large enterprise status in Poland**

Source: KPMG/Prognos (2015) based on data from Managing Authorities.

In Poland through 539 projects a total of 408 large enterprises have been supported. One firm had 1.3 projects on average, which reveals that occasionally a firm was supported multiple times during the programming period. This figure is average among the eight case study countries. The average amount of ERDF support per supported large enterprise was EUR 2.8 million, which is considerably above average of the eight case study countries (EUR 1.6 million).

**Table 21: Key aggregates on the number of projects and supported enterprises by case study country**

	Countries								
	ES	DE	PL	CZ	IT	HU	PT	AT	SUM
<b>Number of supported projects</b>	<b>1,269</b>	<b>763</b>	<b>539</b>	<b>520</b>	<b>416</b>	<b>409</b>	<b>407</b>	<b>194</b>	<b>4,517</b>
Number of supported large enterprises	398	632	408	339	270	273	319	148	2,787
Average number of supported projects / large enterprise	3.2	1.2	1.3	1.5	1.5	1.5	1.3	1.3	1.6
Average amount of large enterprise support / enterprise (EUR mn)	0.8	1.1	2.8	1.4	0.9	1.7	3.5	0.9	1.6

Source: KPMG/Prognos (2015), based on Monitoring and information systems of Member States; (DG Regio): AIR2013 ERDF/CF raw database on project selection.

The Polish case study focuses on the Operational Programme Innovative Economy 2007-2013, which accounted **85% of the support towards large enterprises** in Poland.

## Policy and programme context

Poland consists of sixteen voivodeships (NUTS2), which can be categorised into six regions (NUTS1). Poland's most developed voivodeship, Mazowieckie, is 216th among the 306 NUTS2 regions of the EU in terms of GDP per capita (EUR 15 700). The least developed voivodeships are Lubelskie and Podkarpackie (rank 276 and 277): their GDP per capita amounts to EUR 6 500. Almost all voivodeships in Poland have GDP per capita not exceeding EUR 10 000. This comparison shows the two most pressing problems of the Polish economic policy:

- Polish voivodeships generally lagging behind in terms of economic development;
- There is a large regional disparity characterised by Mazowieckie emerging from the other voivodeships in terms of all development indicators. This is also due to the fact that the capital city Warsaw is located in the region where a large number of companies are already based.

Poland received EUR 67.2 billion support in the 2007-2013 programming period. This amount equates to approximately 2.68% of the Polish GDP in the same period. More than 12.3% of the funds, EUR 8.3 billion has been allocated to the Operational Programme Innovative Economy, which represents 0.33% of the Polish GDP in the whole programming period.

In general, when we talk about Polish enterprise policy, there are currently two, main national programmes **aimed at supporting large enterprises**, as well as foreign direct investments.

The first one is the Programme for supporting investment of major importance to the Polish economy for years 2011-2020. The goal of this programme is to enhance the innovativeness and competitiveness of the Polish economy through supporting new investments made by Polish and foreign enterprises. The enterprises get a financial support if they realize one of the main objectives: increasing the share of innovation, high-tech investments; or the creation of jobs characterized by high level of productivity. The sum of this financial support is equal to PLN 750 million (EUR 174.7 million) and is available to every company functioning in Poland.

The second program, which supports to a great extent large enterprises, refers to the Special Economic Zones. Special Economic Zones (SEZ) were created primarily to accelerate the economic development of regions, to manage former industrial estate and infrastructure, to create new jobs, and to attract foreign investors. This programme's length is planned to be 1994-2026. Overall, a total of 15 zones commenced their operations in recent years, while the number of currently operating zones is 14.

In addition to the above large companies in Poland can receive public support, using other smaller or aimed at thematically different investments (especially regarding the ecological issues).

The main objective of the Operational Programme Innovative Economy 2007-2013 has been identified most of all on the basis of an analysis of the needs of the Polish economy and as a diagnosis of the situation in the science and enterprise sectors, or more specifically development of the Polish economy on the basis of innovative enterprises.

To develop the Polish economy based on innovative enterprise, the detailed objectives of the programme have been introduced:

- Improvement of innovativeness of enterprises;
- Improvement of competitiveness of Polish science;
- Strengthening of the role of science in economic development;
- Increasing the share of innovative products of the Polish economy in the international market;
- Creation of permanent and better workplaces;
- Growth of the use of information and communication technologies in the economy.

In pursuing the programme objectives and addressing the key problems of Poland, the relevant Theories of Change related to the support of large enterprises are summarised in the following table (theories are introduced in detail in the Methodology section of the report).

**Table 22: Main Theories of Change of large enterprise support (Poland)**

Main focus of the theory	Corresponding generalised Theory of Change
Employment	"LE1: Large-scale business investment"
Innovations	"LE3: Innovation support"
R&D	"LE4: Investment in R&D capacity"

Source: KPMG/Prognos (2015).

### Quantification of support to large enterprises

**EUR 1.1 billion** ERDF funding has been contracted to the **416 supported large enterprise projects** within the relevant seven measures of the Innovative Economy Operational Programme. The average project size was **EUR 2.6 million** which is above the EUR 1 million average of the eight case study countries.

**Table 23: ERDF support to large enterprises, total value and number of supported projects within the Economic Development OP by relevant measures**

Name of measure	ERDF contracted support (EUR million)	Total project value (EUR million)	Number of supported projects
3.1. Initiating of innovative activity	16	19	6
3.3. Development of system facilitating investment in small and medium-sized enterprise's	1	2	1
4.1. Support for implementation of results of R&D works	81	339	102
4.2. Stimulation of R&D activity of enterprises and support within the scope of industrial design	20	81	34
4.4. New investments of high innovative potential	340	1 201	99
4.5. Support for investments of high importance to the economy	641	3 630	96

Name of measure	ERDF contracted support (EUR million)	Total project value (EUR million)	Number of supported projects
6.5. Promotion of the Polish economy	5	9	78
<b>Total</b>	<b>1 103</b>	<b>5 281</b>	<b>416</b>

Source: KPMG/Prognos (2015) based on Ministry of Infrastructure and Development, PL.

The form of support targeted to large and small and medium-sized enterprises has been **non-refundable**.

The **aid intensity** of the supported large enterprise projects within the Innovative Economy Operational Programme is an average of **37%**, which is in the top range compared to the average of the eight case study countries. The total investment was **EUR 5.3 billion**.

Overall within the Innovative Economy Operational Programme 17.14% of the support has been contracted to projects implemented in economically disadvantaged areas. A relatively high share of 7.93% of the support went to Podkarpackie – one such regions.

**Table 24: Contracted support to large enterprises by economically disadvantaged status within the Innovative Economy Operational Programme by relevant measures**

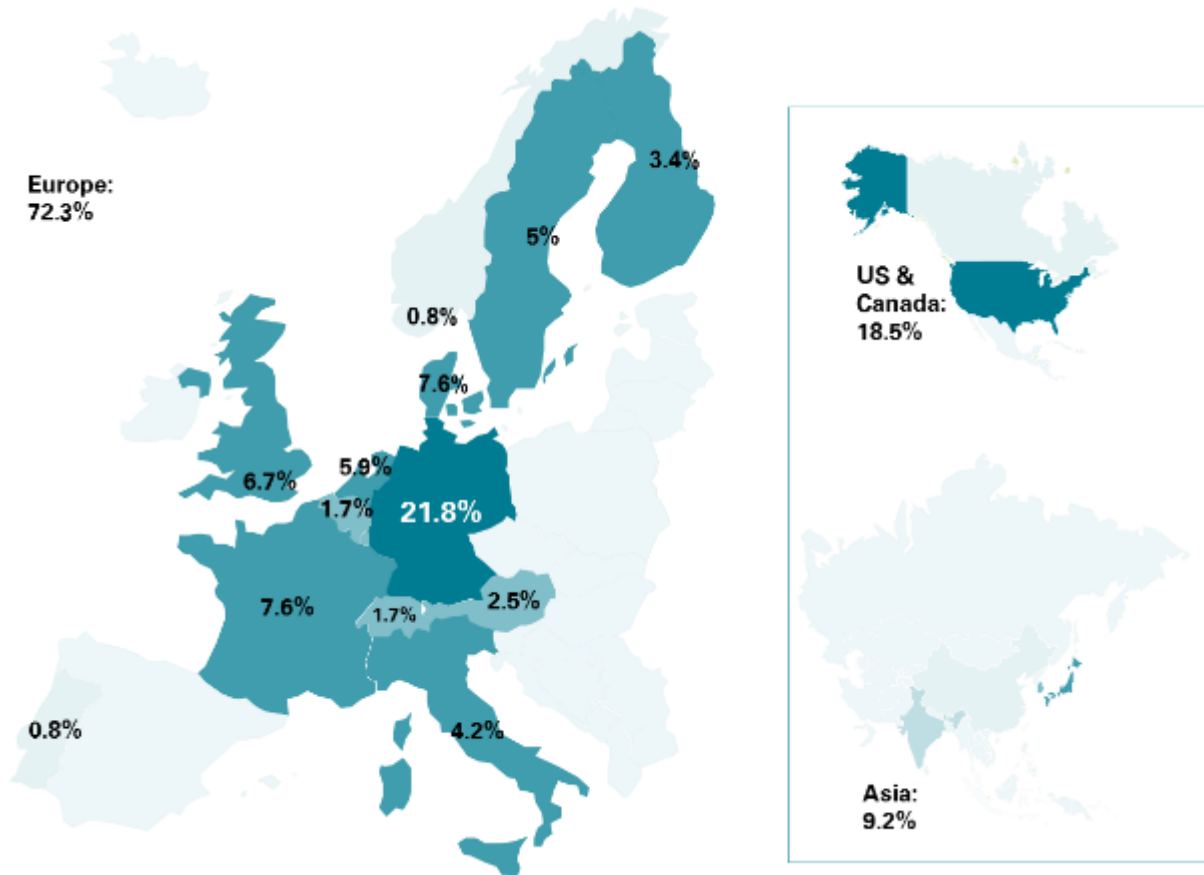
Contracted support		
Economic status	Number of projects	Average support (m EUR)
Economically disadvantaged	63	3.00
Not economically disadvantaged	353	2.59

Source: KPMG /Prognos (2015) based on Ministry of Infrastructure and Development, PL.

The characteristics of supported large enterprises are as follows:

- **338 large enterprises** have been supported from the programme.
- The average amount of ERDF support was **EUR 3.26 million per supported large enterprise**.
- One firm had 1.23 projects on average, which can reveal that nearly **every fourth company** applied successfully for a second time in the programming period.
- Nearly 33% of the large enterprises employ less than 250 people which is less than the average 43% of the eight case study countries. Above average, **21%** of the supported enterprises employ **more than 1 000 persons** (13% in the eight case study countries).
- About **one third** of supported enterprises are **foreign multinational** ones. Out of the supported 338 large enterprises, 220 are national companies. The main countries of origin are Germany and the USA among the foreign multinational companies.

**Figure 12: Distribution of countries of origin among foreign multinational companies supported from the Innovative Economy Operational Programme**



Source: KPMG/Prognos (2015) based on Ministry of Infrastructure and Development, PL.

The share of foreign direct investment projects within the Programme has been quite high. 129 out of the total 416 projects could clearly be identified as foreign direct investment. The total project value generated by these investments exceeds EUR 3441 million. ERDF funds have contributed with EUR 636 million to foreign direct investment.

There was no sectoral focus on the projects' selection. Only those enterprises were chosen in the application process, which were ready to introduce innovation. There was also no differentiation between criteria for newly created large enterprises and large enterprises already operating in the market.

### Results from theory based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialization of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Poland has been linked to and analysed according to the following three Theories of Change "LE1: Large-scale business investment", "LE3: Innovation support" and "LE4: Investment in R&D capacity".

### “LE1: Large-scale investment”

EU funds were a supporting factor or **at most a pre-condition for project implementation. That means that most of the projects would have been implemented even without support.** However, in some circumstances programmes could be a necessary part of the causal package. This includes some of the FDI projects in which support had an impact on the final decision regarding the location of the investment. To some extent the support was also important for the scope and timing of the investment. The latter was important because EU support allowed to speed up the whole investment process, so beneficiaries could start their next investments much earlier.

Implementation of the projects assisted the company increase its scale of operations- new products and services have been introduced to the market, as a direct result of project implementation. Productivity and thereby competitiveness has increased thanks to the investment. Finally for analysed cases the **employment growth reached or exceeded the assumed level.** The number of jobs created within those projects, “makes a difference” at the regional labour market.

**Additionally quality of jobs** created, **increased cooperation with small and medium-sized enterprises** and probably **attraction of other investments** in the region, represent the indirect **wider benefits** of the investments.

Only very few projects have been finished so far, thus the **sustainability of the results are hard to assess at the moment.** However, two case studies conclude that there is a chance for a long term sustainability of the results.

The theory highly depends on the **economic conditions of project implementation**, which was revealed during the world economic crisis. To some extent the theory depends also on the structure of the enterprises.

Overall, the investment have **contributed to the general economic health** of the region and **small and medium-sized enterprise base.** It has to be noted however, that sooner or later this would have happened even without the EU support. Most likely real impacts of the projects are higher for FDI projects, since EU support played an important (but not the only one) role in decision making process regarding the final location of the investment.

### “LE3: Innovation support”

EU funds were a **pre-condition for project implementation.** Without the support projects probably would have been implemented at **later date and at reduced scale.** The theory was well-fitting to the actual needs of Polish market.

The direct effect of the implemented projects materialized in the form of **new products**, introduced to the marked, **growth in terms of employment** and the **scope of operations.**

Medium-term **sustainability** of projects are **secured.** Long-term sustainability (i.e. exceeding 5 years sustainability period) depends on external factors, mainly the company’s **long term investment strategy** (and parent companies, if they exist) and the general market conditions.



At this point it is not yet clear whether there has been a great impact of the LE3 on the **Polish economy**, however there is evidence and also strong facts that some of the large companies developed and are now competitive not only on the Polish market but also in Europe and in the world. It has had an impact on the local economy but also on the small and medium-sized enterprise base. The biggest possible impact of the theory concentrates on **employment growth**.

#### “LE4: Investment in R&D capacity”

EU funds almost always functioned as a **pre-condition** for project implementation. However the support played an important role in **reducing the risk** related to implementation of R&D projects. The programme was a **necessary part of the causal package**, however it was not the main cause of the investment.

The intended change assumed **enhancing innovation** and **growth capacities** and creation of quality jobs in the programme area. All of those goals **were achieved** in the majority of cases. Overall the development of **human based capital** was probably the most important effect of the implemented projects.

The implemented R&D projects are **considered successful** in creating **demand for research jobs, and boosting R&D activities of the companies**. However it's hard to assess at the moment it's contribution to general economic health. At the same time there is no evidence that support resulted in broader cooperation of large enterprises with small and medium-sized enterprises.

#### Conclusion

Between 2007 and 2013, **EUR 1.1 billion ERDF** funding was committed to **416 supported large enterprise projects** within the seven relevant measures of the programme, in the form of exclusively non-refundable support. Enterprise policy in Poland identified uneven regional development, and, among others, low-level of R&D expenditure and lack of innovation capacity to be the key challenges of the economy.

The following table provides an overview of the contribution of large enterprise support based on the triangulated evidence collected within the programme case study, with reference to the strength of the evidence chain.

**Table 25: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Poland**

OUTCOME DIMENSIONS	LE1*	LE3*	LE4*
<b>Effectiveness of support</b>	++	++	++
• <i>investment</i>	++	++	++
• <i>productivity</i>	++	++	+++
• <i>employment</i>	+++	+++	++
<b>Wider benefits</b>	++	++	+
<b>Sustainability</b>	++	+	+
<b>Contribution of large enterprise support to the general economic health of the region &amp; small and medium-sized enterprise base</b>	++	++	++

\* Effects: Substantial (+++), Some (++), Little (+) and None (0)

*"Strength of the evidence chain" describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).*

Source: KPMG/Prognos (2015).

Large-scale investment projects show that most of the supported projects would have been realised without the support. However, the EU support allowed implementing projects sooner or with a larger scope, and had an impact on the final decision of the location of the investment. The same statement is valid for the innovation support type projects. Investment in R&D capacity projects would have been implemented, but EU support successfully decreased the risk.

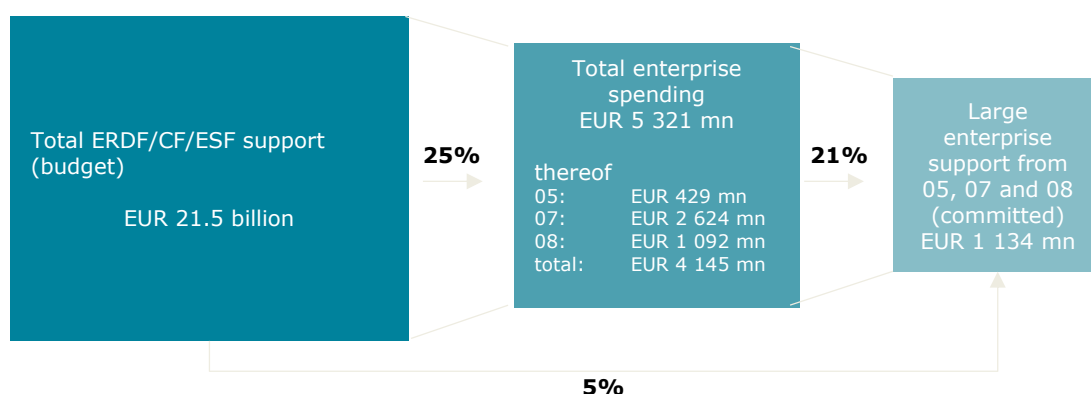
The assessment of the general outcomes shows that the effectiveness of the support, and the contribution to the general economic health of the region and to the small and medium-sized enterprise base were adequate in case of all theories. On the other hand, wider benefits materialised only to a small extent in case of LE4. Expected sustainability of LE3 and LE4 is considered to be little.

## 7. PORTUGAL: ERDF OPERATIONAL PROGRAMME THEMATIC FACTORS OF COMPETITIVENESS 2007-2013

Nearly EUR 22 billion of ERDF/CF/ESF funding has been budgeted for Portugal in the 2007-2013 programming period.

**25%** of the budgeted support of ERDF/CF has been accounted as **enterprise spending**, from which 21% has been awarded to large enterprises, resulting in a **5% share of total large enterprise** support from the budget in Portugal.

**Figure 13: Committed support by relevant expenditure codes and large enterprise status in Portugal**



Source: KPMG/Prognos (2015) based on data from Managing Authorities.

In Portugal through **407 projects** a total of **319 large enterprises** have been supported. One firm had 1.3 projects on average, which reveals that occasionally a firm was supported multiple times during the programming period. This figure is average among the eight case study countries. The **average amount** of ERDF support per supported large enterprise was **EUR 3.5 million**, which is considerably above average of the eight case study countries (EUR 1.6 million).

**Table 26: Key aggregates on the number of projects and supported enterprises by case study country**

	Countries								
	ES	DE	PL	CZ	IT	HU	PT	AT	SUM
<b>Number of supported projects</b>	<b>1,269</b>	<b>763</b>	<b>539</b>	<b>520</b>	<b>416</b>	<b>409</b>	<b>407</b>	<b>194</b>	<b>4,517</b>
Number of supported large enterprises	398	632	408	339	270	273	319	148	2,787
Average number of supported projects / large enterprise	3.2	1.2	1.3	1.5	1.5	1.5	1.3	1.3	1.6
Average amount of large enterprise support / enterprise (EUR mn)	0.8	1.1	2.8	1.4	0.9	1.7	3.5	0.9	1.6

Source: KPMG/Prognos (2015), based on Monitoring and information systems of Member States; (DG Regio): AIR2013 ERDF/CF raw database on project selection.

The Portuguese case study focuses on the **Operational Programme Thematic Factors of Competitiveness 2007-2013**, which accounted **94% of the support towards large enterprises** in Portugal.

## Policy and programme context

Among the 7 NUTS2 regions (North, Algarve, Centre, Lisbon metropolitan area, Alentejo – these five regions comprise what is called Continental Portugal –, Azores and Madeira), Lisbon metropolitan area is the only region in Portugal whose GDP in purchasing power standards was above the EU-28 average (107%) in 2011. The **least developed areas** in Portugal are the North region and the Centre region; both of them had a **GDP level below 65% of the EU-28 average** in 2011.

Since the late 1990's, Portugal's long-term **structural problems** have undermined economic growth, which was further hindered by the economic crisis from 2008. The Portuguese economy has been experiencing difficulties in improving its competitiveness in the international market for a multitude of reasons.

Despite the increase in the number of large, more export-oriented companies in several industry sectors, based on the 2013 The Small Business Act for Europe Fact Sheet, **business sector is still dominated by small or medium-sized enterprises.**

The dominance of small and medium-sized enterprises imply **concentrated focus on domestic markets** engaged in traditional sectors (such as textile, clothing etc.) with less technology and knowledge intensive products, making it more difficult to compete with their larger counterparts operating internationally.

The Operational Programme Thematic Factors of Competitiveness aimed at achieving a sustainable improvement in the competitiveness of the Portuguese economy. It undertook interventions in areas considered strategically important, such as innovation, scientific and technological development, internationalisation, entrepreneurship and the modernisation of public administration.

The programme, with an overall financial allocation of EUR 3.2 billion, focused on the three convergence regions in continental Portugal (North, Centre and Alentejo) and had five instruments at its disposal to pursue its aims: the Enterprise Incentives Schemes (SI), Support System for the Financing and Risk Sharing of Innovation (SAFPRI), Support System for Entities within the National Science and Technology System (SAESCTN), Support System for Administrative Modernisation (SAMA) and Support System for Collective Actions (SIAC).

The Operational Programme played a specific role within the enterprise incentive schemes. It was established to improve business competitiveness and to support medium and large enterprises in these three regions.

Besides the EU-funded support, other complementary **aid packages have been provided such as tax benefits and awards based on performance indicators of the project.** These complementary aid packages were distributed in the form of non-refundable support.

The Thematic Operational Agenda for Human Potential complemented the Operational Programme Thematic Factors of Competitiveness with the following objectives: promote scientific knowledge, innovation and the modernisation of the productive fabric industry and the public administration, and stimulate the creation and quality of employment, emphasising the promotion of entrepreneurship.

**EU support committed to large enterprises targeted** the above mentioned local economic problems, especially **the disadvantaged international competitive**

**position of the Portuguese** economy due to dominance of small and medium-sized enterprises focused on internal markets. Large enterprise support therefore aimed at boosting export oriented and technology intensive production to stimulate international trade by Portuguese companies with both EU and third countries.

The programme supported two Theories of Change, one linked to the generalised theory "LE2" (Technological upgrading) and "LE3" (Innovation support), as indicated below.

**Table 27: Main Theories of Change of large enterprise support (Portugal)**

Main focus of the theory	Generalised Theory of Change
Innovation	"LE2: Technological upgrading"
R&D	"LE3: Innovation support"

Source: KPMG/Prognos (2015).

**The analysis concerns the "LE2" theory** only, due to the fact that more than 99% of the EU funds were aimed at investment projects that had competitiveness improvement, modernisation and employment impact as their main objective.

### Quantification of support to large enterprises

**EUR 1.07 billion ERDF funding has been committed to the 315 supported projects in 246 large enterprises**, within one relevant measure of the Operational Programme Thematic Factors of Competitiveness. The average project size was EUR 3.4 million which is highly above the average EUR 1 million of the eight case study countries.

**Support was paid in the form of refundable grants** without interest or other charges, for a period of six years. **The incentive could be converted to non-refundable grants** up to a maximum of 75% of the refundable grants, provided the company fulfilled certain requirements related to employment, productivity and export levels.

Refundable support was targeted at both large and medium-sized companies. The aid intensity of the supported large enterprise projects was 50% on average. One third of the supported projects (31%) were finalised by the end of 2013, and 66% of funds had already been paid.

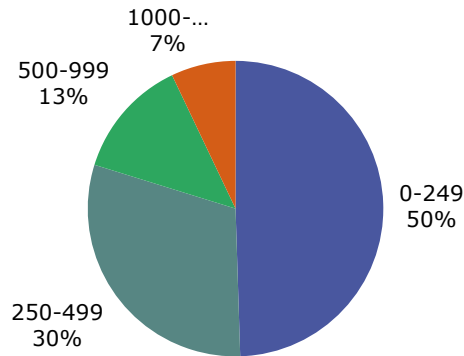
Enterprise support in Portugal on average was the **largest size of support among the 8 case studies** in the analysis (although in a partly refundable form). Out of the top 15 largest support in terms of funds, 13 were in Portugal.

The characteristics of supported large enterprises are as follows:

- **246 large enterprises** have been supported.
- The average amount of ERDF support was EUR 4.3 million per large enterprise.
- One firm had **1.28 projects** on average.
- **Manufacturing companies** comprise nearly **80%** of all companies supported by the Operational Programme, out of which 27% are either medium-low or low technology firms. High- and medium-technology firms comprise of 25% of supported companies.

- Based on the data of 164 companies (out of the 246 supported ones), nearly 50% of the supported large enterprises had less than 250 employees (branches of larger multinational companies). Only 12 of the supported enterprises employed more than 1,000 people.

**Figure 14: Distribution of supported large enterprises from the Operational Programme Thematic Factors of Competitiveness in Portugal by employment category**



Source: KPMG/Prognos (2015) based on data provided by the Portuguese ERDF Managing Authority (2014).

The top 10 beneficiaries received an average amount of between EUR 15.4 million and EUR 51.6 million of ERDF support. They have implemented 5.3% of the projects, and their ERDF support was 31% of the total committed support to large enterprises within the programme. This implies that support aimed at **distributing available funds to key companies with the highest strategic importance** and potential to increase competitiveness, exports and GDP of the region in which the firms operate.

**Funds were concentrated on supporting large, strategic firms** in the country. Also, the supported firms were mainly from the high and medium-high technology sectors, which were aimed at **complementing traditional economic activities with new, more technology and knowledge intensive industries**, as explained in the context section.

### Results from theory based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialization of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Portugal has been linked to and analysed according to the following Theories of Change “LE2: Technological upgrading”.

#### “LE2: Technological upgrading”

“LE2” has been successful in promoting competitiveness improvements, increasing productivity and also attracting large investments to Portugal.

Based on the interviews with company officials and the Managing Authority, **EU funds were assessed not to be the main cause, but were rather a factor of additional support** for the modernisation and technological upgrade of production processes

especially with regard to the timing and scale of the implemented projects. In case of FDI, the influence of EU funds was viewed to be stronger, grants were part of a larger causal package (taxes, historical ties, etc.) and had an impact on the location choice of the investment.

**The programme was a necessary part of the causal package**, along with several other external factors such as company strategy foreseeing growth and export through technological development, tax exemptions offered by local government along with the presence of developed basic infrastructure. Company officials as well as Managing Authorities claimed that **projects overall would have been implemented without support**, however at later dates, in longer period of time, with limited scale, or at other location. Had the projects not been supported, the effects (both direct and indirect) would have typically been realised later.

Among the direct effects of support, **modernisation of production processes promoted export growth as a result of increased production and productivity** as was noted by the interviewees and from the reported data on production statistics. Results on the impact of the support on additional investments were mixed, two companies claimed that the implementation of their projects influenced further decisions on additional investments, while two other cases could not confirm the effects. **The most visible impacts on jobs was most relevant in case of the FDI project**. In the other cases jobs that were created were usually indirect and it proved difficult to assess the extent to which they could be attributed to the support (mainly as a result of additional business activities, increased use of suppliers). Job creation in general was more observable in case of projects that increased their production by introducing new products, than those investing in technological modernisation.

Both the Managing Authority and beneficiary enterprises agreed that **projects have brought change to the affected regions**. The most relevant wider effect was the spillover effect that supported enterprises generated in the relevant regions on both local large enterprises and small and medium-sized enterprises. The local suppliers have been encouraged to continuously improve the quality of their service to meet the requirements of the multinational companies. In some of the mini case studies, especially in case of the FDI project where support was directed to a new industry in the Portuguese economy, new companies were attracted to the region.

The assumptions and external factors of the theory have occurred, presence of developed infrastructure and tax incentives were regarded as key supporting factors for project implementation.

## Conclusion

Between 2007 and 2013, **EUR 1,072 million** of ERDF funding was committed to **315 supported large enterprise projects** within one relevant measure of the programme, in the form of refundable and non-refundable support. Enterprise support in Portugal on average gave the **largest size of support among the 8 case studies** between EUR 15.4 million to EUR 51.6 million. The TOP10 supported enterprises **have implemented 5.3% of the projects**, and their ERDF support was **31% of the total committed support** (to large enterprises) within the Operational Programme Thematic Factors of Competitiveness.

Enterprise policy in Portugal identified several key challenges over the course of support including long-term structural problems of the Portuguese economy, labour market

related problems such as high unemployment rates, low-level of R&D expenditure and inward FDI.

**The primary strategic objectives of the public intervention was to mitigate these challenges**, thus the aims of the Operational Programme ‘Thematic factors of competitiveness’ were productive sector enhancement, international economy orientation, public administration improvement, knowledge and innovation-based economic development.

The following table provides an overview of the contribution of large enterprise support based on the triangulated evidence collected within the programme case study, with reference to the strength of the evidence chain.

**Table 28: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Portugal**

OUTCOME DIMENSIONS	LE2*
<b>Effectiveness of support</b>	<b>++</b>
• <i>investment</i>	++
• <i>productivity</i>	+++
• <i>employment</i>	++
<b>Wider benefits</b>	<b>++</b>
<b>Sustainability</b>	<b>++</b>
<b>Contribution of large enterprise support to the general economic health of the region &amp; small and medium-sized enterprise base</b>	<b>+</b>

\* *Effects: Substantial (+++), Some (++)*, Little (+) and None (0)

"Strength of the evidence chain" describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).

Source: KPMG/Prognos (2015).

Large share of the supported projects would have been implemented without EU support; however, they would have been either in different, segmented phases, during a longer period of time or scheduled at a later date. In case of FDI, the influence of EU funds was viewed to be stronger as support influenced the location choices of foreign large enterprises.

The assessment of the general outcomes shows that the effectiveness of the support, the wider benefits and the expected sustainability were adequate in case of the theory. On the other hand, the contribution to the general economic health of the region and to the small and medium-sized enterprise base materialised only to a small extent in case of LE2.



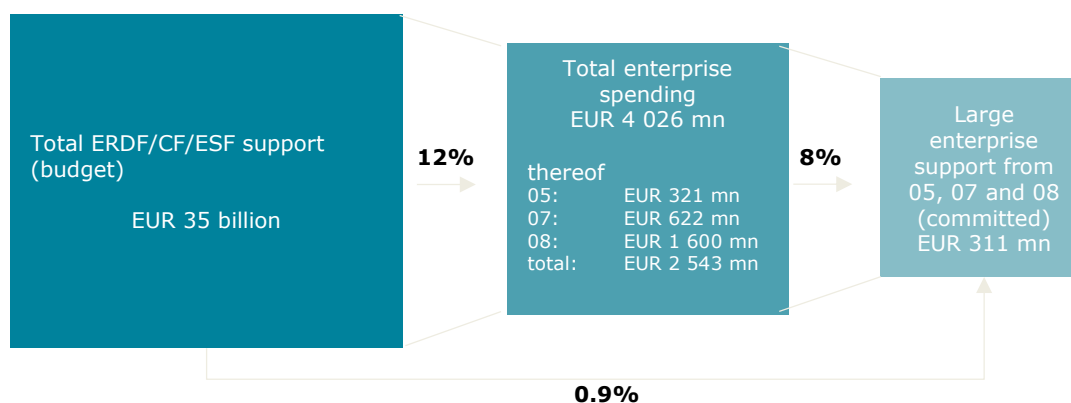
## 8. SPAIN: ERDF COMUNIDAD VALENCIANA OPERATIONAL PROGRAMME 2007-2013

### Spain

Nearly EUR 35 billion of ERDF/CF/ESF funding has been budgeted for Spain in the 2007-2013 programming period. The total committed amount at the end of 2013 was EUR 27 billion of ERDF/CF funding.

15% of the committed support of ERDF/CF has been accounted **as total enterprise spending**, from which **8% has been awarded to large enterprises**, resulting in a 0.9% share of total large enterprise support from the budget in Spain.

**Figure 15: Committed support by relevant expenditure codes and large enterprise status in Spain**



Source: KPMG/Prognos (2015) based on data from Managing Authorities.

In Spain through 1,269 projects a total of 398 large enterprises have been supported. One firm had 3.2 projects on average. This figure is high above average among the eight case study countries. The average amount of ERDF support per supported large enterprise was EUR 0.8 million, which is considerably below the average of the eight case study countries (EUR 1.6 million).

**Table 29: Key aggregates on the number of projects and supported enterprises by case study country**

	Countries								
	ES	DE	PL	CZ	IT	HU	PT	AT	SUM
<b>Number of supported projects</b>	<b>1,269</b>	<b>763</b>	<b>539</b>	<b>520</b>	<b>416</b>	<b>409</b>	<b>407</b>	<b>194</b>	<b>4,517</b>
Number of supported large enterprises	398	632	408	339	270	273	319	148	2,787
Average number of supported projects / large enterprise	3.2	1.2	1.3	1.5	1.5	1.5	1.3	1.3	1.6
Average amount of large enterprise support / enterprise (EUR mn)	0.8	1.1	2.8	1.4	0.9	1.7	3.5	0.9	1.6

Source: KPMG/Prognos (2015), based on Monitoring and information systems of Member States; (DG Regio): AIR2013 ERDF/CF raw database on project selection.

## Comunidad Valenciana

The Spanish case study focuses on the **Comunidad Valenciana Operational Programme 2007-2013**, which accounted more than **28% of the support towards large enterprises** in Spain.

### Policy and programme context

Comunidad Valenciana is one of the 19 NUTS 2 regions of Spain (17 Autonomous Communities and 2 Autonomous Cities). In 2011, GDP of Comunidad Valenciana in PPS (purchasing power standards) reached 85% of the EU28 average. While the most developed regions in Spain (País Vasco, Comunidad de Madrid and Comunidad de Navarra and many other Autonomous Communities, such as La Rioja, Aragón, Cataluña and Islas Baleares) have GDP per capita values exceeding the EU28 average. Comunidad Valenciana struggles with high unemployment rate and low level of business R&D.

Since 99.9% of Spanish companies are small and medium-sized enterprises, **enterprise policies focus on improving the competitiveness of small and medium-sized enterprises**. However, some of the business support programmes designed by policy makers include support for large enterprises. In the case of Comunidad Valenciana, there are several entities supporting large enterprises.

To address the challenges related to enterprise support, a number of strategic objectives pursued by ERDF Operational Programme 2007-2013 in Comunidad Valenciana were linked to enterprise support. In line with these strategic objectives, the **strategic priority lines** defined by the programme regarding enterprise support include:

- Enhancing regional competitiveness through investment in communications infrastructure and through strengthening R&D and innovation (specifically from the private sector).
- Promoting productivity and diversification of production structures.

While large enterprises are eligible for public support, the **actions** included in the Operational Programme were mainly designed to **meet the needs of small and medium-sized enterprises** in terms of technological and organisational innovation, internationalisation, and access to financial resources for productive investment, technology and advisory services.

The programme supported one generalised Theories of Change, linked to the generalised theory "LE1" (Large-scale business investment) as indicated below.

**Table 30: Main Theories of Change of large enterprise support (Spain)**

Main focus of the theory	Generalised Theory of Change
Employment	"LE1: Large-scale business investment"

Source: KPMG/Prognos (2015).

In Comunidad Valenciana, the most important support programmes are focused on increasing employment and preventing firms already settled in the area from leaving. More than 99% of EU funds were aimed at investment projects with the improvement of competitiveness and job creation as their main objectives.

### Quantification of support to large enterprises

EUR 87.6 million in ERDF funds has been committed to **120 supported large enterprise projects** within the relevant three measures of the Comunidad Valenciana Operational Programme.

**Table 31: ERDF support to large enterprises, total value and number of supported projects within the Comunidad Valenciana Operational Programme by relevant measures**

Name of measure	ERDF committed support (EUR million)	Total project value (EUR million)	Number of supported projects
Regional support	84	105	8
Reindustrialisation	2.8	3.6	6
Internationalisation	0.6	0.5	106
<b>Total</b>	<b>87.6</b>	<b>109.5</b>	<b>120</b>

Source: KPMG/Prognos (2015) based on data provided by the implementing body with a cut-off date of October 22nd, 2014.

Although **eight projects** seem to constitute the **majority of the investment support**, some of them (such as automotive manufacturing companies, which have been supported by EU funds under different projects) included several investment initiatives linked to the creation or modernisation of production plants.

The **average aid intensity** of the supported large enterprise projects within the programme was **8%**. Total investments carried out by the large enterprises amounted to EUR **1.3 billion**.

The support has been distributed through **grants and refundable loans**, with loans accounting for the majority of support. A marginal share of the supported projects (4%) has not been contracted yet, 34% of the support has been paid already.

The characteristics of supported large enterprises are as follows:

- **36 large enterprises** have been supported from the programme.

- The average amount of ERDF support was **EUR 2.4 million**.
- A large enterprises had **3.33 projects** on average.
- 60% of companies applied for a second time.
- **Differences** in the **amount** of received **support** were **very significant**. Projects supported under "regional support" received higher amounts, the two largest projects being those of a firm receiving EUR 71 million and another one receiving EUR 12 million.
- The **TOP5** supported enterprises have implemented 8.3% of the projects; however, their ERDF support was **98% of the total support committed** to large enterprises within the Comunidad Valenciana Operational Programme.

**Table 32: TOP 5 supported large enterprises in Comunidad Valenciana**

Large enterprise core business	Funding volume (ERDF)	Type of activity	Type of investment project
Automotive manufacturing	71.2	High- and medium-high technology manufacturing	4 projects for the production of new models of vehicles or new vehicles in Spain
Footwear	12.4	More basic services	1 project for the implementation of a new system for storing and manipulation of products
Cosmetics manufacturing	1.3	High- and medium-high technology manufacturing	Improvement of the manufacturing process in order to increase the production
Automotive components manufacturing	0.7	High- and medium-high technology manufacturing	Creation of a plant for the production of the interiors of the new vehicles manufactured by the company
Ceramics manufacturing	0.52	Medium-low-technology manufacturing	2 projects for the improvement of machines and managing systems for the production of ceramics

Source: KPMG/Prognos (2015) based on Managing Authority of Comunidad Valenciana.

The ERDF support analysed was intended to be used in areas suffering from decreases of income, loss of employment and relocation of population, mostly due the economic and financial crisis of 2008. Support during this period **intended to prevent additional large enterprises from leaving these areas** as they play a crucial role in employment and the generation of added value.

The final objective of the support programmes was to contribute to the economic development of a region and to the creation/preservation of jobs. Therefore the grants were provided to the enterprises that met the established criteria in terms of impact on employment and development in the region, irrespective of whether such enterprises were national or foreign.

Both, in the case of the reindustrialisation grants (REINDUS Programme) and regional incentives (Regional Incentives Programme), the financial support could be applied for any company meeting the employment impact criteria.

The reindustrialisation programmes, however, have provided support specifically to a number of sectors in specific regions in order to avoid the relocation of companies important for the regional economy. The programme has succeeded in preventing downsizing during the years of the economic crisis.

On the other hand, the Regional Incentive Programmes aimed to support the economic development of disadvantaged areas by encouraging large enterprises to carry out investments in such areas.

### Results from theory based impact assessment

This section presents a short summary and discussion of key findings based on the theory-based impact assessment on large enterprise support. The evidence collected on the materialization of the Theories of Change (ToC) and their intended changes comprises in-depth interviews with beneficiaries and local stakeholders, a literature review, semi-standardised interviews with public officials, and monitoring data collected in the case study.

Large enterprise support in Spain has been linked to and analysed according to the following Theories of Change “LE1: Large-scale business investment”.

#### “LE1: Large-scale business investment”

The support programmes included in Theory of Change “LE1” **have achieved their main objective**, i.e. having an impact on employment and the economic development of Comunidad Valenciana as well as to prevent major employers from leaving the region. According to monitoring data, **more than 6,000 jobs** have been created directly, many requiring qualifications (higher degrees, engineers and higher vocational training). Considering the large number of indirect jobs created indicated by interviewed enterprises, this figure almost certainly underestimates the number of jobs created as a result of the implementation of the projects. **Preservation of existing jobs**, crucial during the time of the economic crisis, was also achieved.

As regards projects involving **large-scale investments** receiving non-refundable support, EU support has played a key **role in the strategic decision-making process** of the enterprises regarding the final location and scale of the investment. However, in some cases, mainly involving **small-scale projects** receiving refundable support, company strategy had been defined prior to the application for support. Consequently, the programmes can be considered, at best, as **supporting factors**. Funding of guidance services were not mentioned by any of the interviewees to have influenced investment decisions.

The projects carried out enhanced the **competitiveness** of the supported enterprises and contributed to the **creation of new workplaces**. The local heritage in the automotive, ceramic and footwear industries was a pre-condition to achieve these goals instead of a supporting factor as supposed prior to the beneficiary interviews. Contrary to the preliminary expectations, tax incentives have not played a role in the decision making process of the companies either as a pre-condition or as a cause. Based on the interviews, supportive company strategy and the availability of qualified labour force proved to be important pre-conditions for the realisation of the impacts. The role of governmental support could not be assessed due the lack of evidence on the subject.

**Indirect effects** were perceived as highly relevant by all interviewees. Such indirect effects resulting in additional job creation are considered to be directly caused by the projects instead of being supported by them. The presence of large enterprises in certain regions linked to specific sectors has helped to generate wealth and promote economic development in Comunidad Valenciana. The most successful large-scale project carried out by a multinational company in the automotive industry has even managed to attract other companies to the region. The important **spill-over effect** generated by the

supported enterprises among the local businesses have been highlighted both by the executives of the companies and by the public bodies in charge of the management of the support programmes. Experience with cooperating with multinationals has led some suppliers (including small and medium-sized enterprises) to take the road of internationalisation themselves. Other identified indirect effects include an increased demand for qualified workforce and in some cases improved workforce mobility.

Alternative explanations for the behavioural change of the interviewed enterprises have been carefully explored. In the automotive industry **investment cycles are 7-8 years long**. In order to stay competitive in the market, additional investments are required, for instance to manufacture updated models. The location of such investments is largely determined by the location of earlier investments. Therefore, investments carried out prior to receiving the support are considered to be important determinants in the interviewed enterprises' investment decisions.

As regards the **sustainability of the investments**, even though all interviewed companies were certain of their presence in the region in the next 5 years, they are somewhat unsure of their presence in the next 7-8 years. Some argue that their presence is subject to the possibility of securing new orders from the companies which they supply. The uncertainty of other enterprises lie with the fact that in the programming period 2014-2020 industrial investments by large enterprises will no longer be eligible for EU support.

## Conclusion

Between 2007 and 2013, **EUR 87.6 million** in ERDF funds has been committed to **120 project applications submitted by 36 large enterprises** within the relevant three measures of the Comunidad Valenciana Operational Programme, in the form of refundable and non-refundable support. Support received by the biggest beneficiaries account for 98% of total support allocated to large enterprises.

The following table provides an overview of the contribution of large enterprise support based on the triangulated evidence collected within the programme case study, with reference to the strength of the evidence chain.

**Table 33: Materialisation of intended changes through supported large enterprise projects by Theory of Change in Spain**

OUTCOME DIMENSIONS	LE1*
<b>Effectiveness of support</b>	++
• <i>investment</i>	+++
• <i>productivity</i>	++
• <i>employment</i>	+++
<b>Wider benefits</b>	++
<b>Sustainability</b>	++
<b>Contribution of large enterprise support to the general economic health of the region &amp; SME base</b>	+++

\* Effects: Substantial (+++), Some (++), Little (+) and None (0)

The colour coding represents the "Strength of the evidence chain" that describes the quality and reliability of the existing evidence base that the contribution assessment has been based on using a scale from "strong" (dark green), "medium" (green) to "weak" (light green).

Source: KPMG/Prognos (2015).

Regarding the causal link between the EU support and project implementation, in large projects, EU support was one of the key factors taken into account in the decision making of the companies concerning their investment in technology or modernisation. In smaller investment projects, EU support was rather considered to be a supporting factor. In one of the cases, EU funds at best helped to expedite the project execution. In the other case, project had no influence on the project implementation at all, the foreign multinational company would have implemented the project unchanged.

The assessment of the general outcomes shows that the theory was successful, having at least some effects from all analysed perspectives. The effectiveness of the support, the wider benefits and the expected sustainability were adequate. In addition, contribution to the general economic health of the region and to the small and medium-sized enterprise base was substantial.

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