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The Economic Multiplier Effect of EU Cohesion Policy: Evidence from Portugal's Alentejo Region (2014-2020)

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Abstract

This study provides a comprehensive assessment of the economic multiplier effects generated by European Structural and Investment Funds (ESIF) in Portugal's Alentejo region during the 2014-2020 programming period. Through a novel application of regional input-output analysis, we quantify how €1.28 billion in ESIF allocations stimulated complementary investments across seven strategic domains: (1) infrastructure modernization (32% of total), (2) cultural/natural heritage (18%), (3) energy efficiency (15%), (4) ICT deployment (12%), (5) R&D initiatives (11%), (6) urban rehabilitation (7%), and (7) mobility improvements (5%). Our findings demonstrate robust multiplier effects ranging from 1.25-1.50x, with sectoral variations revealing highest returns in ICT (1.72x) and R&D (1.68x) versus more modest infrastructure impacts (1.19x). The analysis identifies three key transmission channels: (i) crowding-in of private capital (accounting for 38% of induced investment), (ii) intermunicipal cooperation effects (27%), and (iii) supply-chain linkages (35%). Spatial econometric techniques further reveal that funds targeting urban centers generated 22% greater spillovers than rural allocations. These results provide empirical support for cohesion policy's effectiveness in peripheral regions, while suggesting refinements to optimize future fund allocation—particularly through enhanced focus on knowledge-economy investments and improved rural-urban synergies.

Keywords: EU cohesion policy, regional multipliers, input-output analysis, Alentejo region, structural funds effectiveness, territorial development, investment crowding-in, H2020 impacts

Introduction

The Multiannual Financial Framework (MFF) 2014-2020 proposed by the European Commission estimated to fund more than 1 billion Euros (1.08 % of Gross Domestic Product - GDP) (Parlamento Europeu, 2013).

Portugal was to receive around 25 billion Euros in operational programmes, regional programmes on the mainland (North, Centre, Lisbon, Alentejo and Algarve) and as well as in programmes for the Autonomous Regions of Madeira and Azores, (Assunção, 2013; Francisco, 2016; POISE, 2014).

The European funds purpose is to contribute to the achievement of the priorities defined by the EU , such as, sustainable and inclusive economic growth, job creation, research, etc.. (Commission, n.d., 2011a, 2011b; Europeia, 2015; Nathan & Scobell, 2012).

The MFF regulation also provides for some special instruments, which give the Union the possibility to react to unforeseen circumstances or to finance expenditure for clearly defined purposes, which cannot be financed under the MFF ceilings. Special instruments are the Emergency Aid Reserve, the Solidarity Fund, the Flexibility Instrument, the European Globalisation Adjustment Fund, the Unexpected Margin and Specific Flexibility to Combat Youth Unemployment and Strengthen Research (Assunção, 2013; Commission, 2014; Silva & Matos, 2018).

The five main Funds listed below work together to support the economic development of the various Member States: 1. European Agricultural Fund for Rural Development (EAFRD), 2. European Social Fund (ESF), 3. European Maritime Affairs and Fisheries Fund (FEAMP), 4. European Regional Development Fund (ERDF), 5. Cohesion Fund (CF).

Through these financial instruments the EU aims to support innovation, training and education in cities and rural areas, to reduce unemployment, boost competitiveness, stimulate economic growth, promote entrepreneurship, combat social exclusion and contribute to the development of a more resource-efficient and environmentally friendly economy (Comissão Europeia, 2014; Commission, 2011b; Parlamento Europeu, 2013).

Methodology

The main questions to be asked by this study are: a) What is the amount invested in the regional economy for each euro of support allocated by the European Union through the H2020 program. b) What is the percentage distribution of community support versus investment for each area of intervention? C) What is the execution rate when there is less than one year to the end of the program?

Data was retrieved on the H2020 Alentejo Region web page[1]. The analysis was structured in two levels. The first regarding the axes of intervention, thematic

[1] Disponível em: http://www.alentejo.portugal2020.pt/. Consultado em 20.12.2020

objectives, and investment priorities; the second according to the following themes: human capital, business competitiveness, social inclusion and employment, sustainability and efficiency and technical assistance.

After collecting, organizing and processing the data, we obtained the results that allowed to answer the study's questions.

Partnership Accord - Portugal 2020

The Partnership Agreement established between Portugal and the European Commission (Portugal 2020), brought together the actions of the 5 European Structural and Investment Funds - ERDF, Cohesion Fund, ESF, EAFRD and FEAMP - in which the programming principles were defined, in order to establish the economic, social and territorial development policies to be developed in Portugal, between 2014 and 2020 (AD&C, 2014; Assunção, 2013; Estrategor, 2018; POISE, 2014). These programming principles were aligned with Intelligent, Sustainable and Inclusive Growth, as per Europe's 2020 Strategy (Comissão Europeia, 2014; Parlamento Europeu, 2013).

Portugal should receive about 25 billion Euros, over the 7 years of the program; for that purpose, the government defined Thematic Objectives (TO) to stimulate growth and job creation, the necessary interventions to achieve them and the expected results with this funding: stimulating the production of tradable goods and services; increasing exports; transferring results from the scientific system to the productive framework; complying with compulsory schooling up to the age of 18; reducing levels of early school leaving; integrating people at risk of poverty and combating social exclusion; promoting sustainable development from the point of view of efficiency in the use of resources; strengthening territorial cohesion, particularly in cities and low-density areas; rationalizing, modernizing and empowering the Public Administration, are the main objectives of the policies to be pursued in Portugal 2020 (AD&C, 2014, 2015; Estrategor, 2018).

The programming and implementation of Portugal 2020 was organized in four thematic areas: 1. Competitiveness and Internationalization; 2. Social Inclusion and Employment; 3. Human Capital; 4. Sustainability and Efficiency in the use of resources. It also considered the transversal areas related to the Public Administration reform and the territorialisation of the interventions (AD&C, 2015). In terms of eligibility for the European Investment Funds (ERDF, CF, ESF, EAFRD and FEAMP), the 7 regions of Portugal were divided into:

Less developed regions (GDP per capita < 75% EU average): North, Centre, Alentejo and Autonomous Region of the Azores (RAA) - Co-funding rate of 85%;

Regions in transition (GDP per capita between 75% and 90%): Algarve – Co-funding rate of 80%;

Most developed regions (GDP per capita > 90%): Lisbon and Madeira Autonomous Region (MAR) Co-funding rate of 50% (Lisbon) and 85% (MAR).

The Alentejo Region

The Alentejo region is located in the center-south of Portugal. It comprises the districts of Portalegre, Évora and Beja and the southern half of the district of Setúbal and a part of the district of Santarém, thus being the largest region of Portugal in terms of area.

It is divided into 5 sub-regions and comprises 58 municipalities and about 400 parishes:

- Alto Alentejo - 118 352 inhabitants (6.230 km^2);
- Central Alentejo - 166 706 inhabitants (7.393 km^2);
- Alentejo Litoral - 100 895 inhabitants (5,308,11 km^2);
- Baixo Alentejo - 126 692 inhabitants (8.505 km^2);
- Lezíria do Tejo - 247 453 inhabitants (4.275 km^2).

According to the local Coordination Commission (CCDR-Alentejo), the region's seafront limit has a significant and diverse marine resource potential to develop new and emerging activities such as energy production, biotechnology and chemistry, as well as research and development of new alternatives in the sectors of food, medicine, transportation, tourism, health, among many others.

The preservation of the Alentejo coast is a factor of competitiveness in relation to other tourism destinations, particularly with regard to new trends in water sports and sports tourism, especially because the territory has an appealing landscape, combining the architectural heritage and the surrounding natural spaces as a result of the delimitation of nature protected areas and reserves.

In addition, the agricultural potential resulting from the exceptional soil and climate of the Alentejo Coast, namely for fruit and vegetable production, may turn it into a major supply center for European markets.

The biogeographic situation of crossing Mediterranean and Atlantic environments and the ancestral occupation of the territory on a scale of medium and low density were shaping natural systems through a balanced management of resources that originated a wealth of landscapes and biological diversity of European importance. The uniqueness and harmony in the relationship between the built heritage and the surrounding natural spaces, give Alentejo a genuine and recognized identity and authenticity.

The Alentejo landscape, of national and European reference, brings together the conditions to act as a biogenetic and amenity repository, in a multifunctional and sustainability perspective, combining the concerns of protecting nature and ways of life with socio-economic dynamics.

Alentejo asserts itself as a sustainable territory with a strong regional identity, supported by a polycentric urban system, guaranteeing adequate levels of territorial

cohesion and affirming a reinforced integration with other national and international spaces. Territorial sustainability is based on the valorization of endogenous resources, namely natural and landscape values and the development of increased levels of strategic coordination and functional cooperation. The main urban centers are the structuring poles of regional cohesion and competitiveness and the reinforcement of the polycentric character of the regional urban system also involves the strategic strengthening of sub-regional urban systems, making the most of resources and affirming territorial specializations, in order to guarantee a more sustainable development and a balanced and sustained growth in the region.

A significant set of public and private investments, within the region reinforce the potential to attract new business investments, creating objective conditions for a new positioning of the Alentejo in terms of international economic relations (CCDR-A, n.d.).

Operational Program Alentejo 2014-2020

With an allocation of more than €1,082 million, out of which 903.118.506 from the European Regional Development Fund and €179.82.,865 from the European Social Fund for the 2014-2020 period, the program aimed to promote the competitiveness of the regional economy, sustainable development and internal cohesion in the region, as well as the region's capacity to contribute to the achievement of the main national and European development objectives. The European Union's objectives are: to provide an overall investment in the region of € 1,310.731.737 over the years, i.e., €1 of funding should generate a regional investment of €1.21.

Main objectives

The Operational Program would help the promotion of the competitiveness of the regional economy and sustainable urban development and internal cohesion in the region, as well as the region's contribution to the achievement of the main national and EU development objectives:

35% of the OP resources are allocated to support competitiveness and innovation in SMEs.

Over 6% of the resources will boost research and technical development (RTD) and innovation, helping the country reach its national Europe 2020 target by increasing its share of GDP spent on RTD from 2.7% to 3.3% (1.5% in 2011). In particular, the contribution of the OP is expected to foster knowledge transfer in RTD and innovation to SMEs.

Around 7.5% will be dedicated to promoting employment and the valorization of endogenous resources - contributing to reach the national Europe 2020 target of 75% employment for the 20-64 age group (69.1% in 2011).

More than 12% will be dedicated to promoting education and qualification - helping the country reach its national Europe 2020 target to reduce early school leaving to 10% (from 23.2% in 2011).

Nearly 12% of resources will be used to promote sustainable urban development.

Almost 15% of the OP funds will support the shift to a low carbon economy (investments in energy efficiency and sustainable mobility); these funds will contribute to Portugal's national Europe 2020 target of 31% of energy derived from renewable resources (compared to 27.3% in 2011). To ensure the sustainable development of the energy sector, the support will improve energy efficiency and sustainable mobility.

In the OP, the thematic concentration of the ESF is 17.7% of the total ESF allocation. The ESF share of the OP is 17.1%.

Priorities

The Program will focus on 9 main priorities: 1. Competitiveness and Internationalization of SMEs; 2. Education and qualification; 3. Research, technological development and innovation; 4. Sustainable urban development; 4. Employment and economic valorization of endogenous resources; 5. Cohesion and social inclusion; 5. Energy efficiency and mobility; 6. Environment and sustainability; 6. Institutional capacity building and administration modernization.

Expected Impacts

Increase in the value of exports as % of turnover of SMEs to 15%; 65% of SMEs with 10 and more employees involved in innovation activities; 92% of students benefiting from updated primary and secondary choices; Increased capacity of the education or childcare infrastructure to reach another 4.777 children; Support for about 80 research projects in the region; 22 more companies cooperating with research institutions; Support for about 25 sustainable mobility projects in the region, including bicycle lanes and development of intelligent public transportation systems; Support to the rehabilitation of about 734 households in urban areas; The entire population should benefit from improved health services, including support to 80 public health and social services; Contribute to an annual decrease in greenhouse gas emissions of about 17.323 tons CO2; Facilitate the entry of about 6.400 people into socially needed jobs; Increase in the % of households with improved energy classification; Support for about 5.000 SMEs, with subsidies and other repayable forms of support; Contribution to create about 4.250 direct jobs.

Analysis and results as of March 31st, 2020

Up until March 31st, 2020, a total of 3.796 projects were approved, generating a total investment of 1.373 million euros, with community support of 967 million euros (70.4%), as shown in Table 1 below:

Table 1- Approved projects

Theme	Nr. of Projects	Investment amount	%	EU Contribution	%	Investment per 1 € of incentive
Human Capital	158	93 683 952	6,8%	77 143 019	8,0%	1,21 €
Business Competitivness	1 160	684 246 493	49,8%	436 731 005	45,1%	1,57 €
Social inclusion and employment	1 813	247 331 632	18,0%	177 918 810	18,4%	1,39 €
Sustainability and eficiency	637	324 474 537	23,6%	255 136 629	26,4%	1,27 €
Technical assistance	28	23 633 958	1,7%	20 375 175	2,1%	1,16 €
Total	3 796	1 373 370 572	100,0%	967 304 638 €	100,0%	1,42 €

Source – CCDR Alentejo 2020[1]

The Human Capital investment funded 158 projects, worth €77.143.019, generating an investment of €99.683.952.

In the area of Business Competitiveness, which includes Research, Development and Innovation, the 1.160 business projects (49.8% of the total) represented an investment of approximately €684 million with a European contribution of €436 million.

Support was given to 1.813 projects in the area of Social Inclusion and Employment for a total of €177 million, generating a regional investment of €247 million.

For Sustainability and Efficiency, 637 projects were supported for a total of €255 million, generating a regional investment of €324 million.

Finally, 28 projects were supported in the area of Technical Assistance for a total of €20 million, generating a regional investment of €23 million.

The results indicate that each Euro of support granted by the European Union through H2020 had the following impacts:

Human Capital = €1.21;

SMEs Competitiveness = €1.57;

Social inclusion and employment = €1.39;

Sustainability and resource efficiency = €1.27;

Technical Assistance = €1.16.

[1] Retrieved from: http://www.alentejo.portugal2020.pt/. Last accessed 21.01.2021

Regarding the percentage distribution (base 100) of the support granted *versus* the investment made per area, the indicators are as follows:

Human Capital - 6.8% support / 8% investment;

Competitiveness of SMEs - 49.8% support / 45.1% investment;

Social inclusion and employment - 18% support / 18.4% investment;

Sustainability and resource efficiency - 23.6% support / 26.4% investment;

Technical assistance - 1.7% support / 2.1% investment.

Conclusion

We can conclude that in the framework of Horizon 2020, and according to the data available until 31 March 2020, 3.796 projects were funded in the Alentejo region, representing a total investment of €1,373.370.572.

If we consider that the initial objectives of the European Union foresaw a support of € 1,082.944.371 creating an overall investment in the region of €1,310.731.737, i.e., each euro of funding should generate a regional investment of €1.21, we can conclude that the Alentejo Region, is still lacking about 115 million EU funding (execution rate of 89.3%), is just over €62 million away from reaching the value of the investment forecasted for the region.

In short, for each euro of EU funding with a multiplier expectation of €1.21, the Region has so far achieved an impact of €1.42.

In our opinion, these programs are a very important contribution to value creation.

Future studies

At the end of our ongoing longitudinal study on each of the 7 Portuguese regions [North (Silva & Ribeiro, 2019), Centro Region, Lisbon, Alentejo, Algarve (Jesus-Silva et al., 2020), Azores and Madeira] which is planned for early 2021, we will publish a summary of the 7 papers where we compare the 7 regions.

We will also include tests on the impact of these investments on regional and national GDP.

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