

The European Cohesion policy and the promotion of entrepreneurship. The case of Andalusia

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ABSTRACT: This paper discusses the significance, trends and achievements of the entrepreneurship and small and medium-sized enterprise policy in Andalusia developed with the support of the European Regional Development Fund (ERDF). The lack of entrepreneurial culture and business environment conditions unfavourable to entrepreneurship have traditionally acted as structural obstacles to regional development in Andalusia. In order to face this problem, the role of the entrepreneurship policy within the strategy for regional development has increased over the programming periods of the European Cohesion policy. This article proposes some recommendations for a more effective and efficient design of the Cohesion policy in this field drawing on the analysis of the experience of Andalusia.

JEL Classification: R11; R58; L26.

Keywords: Cohesion policy; ERDF; entrepreneurship; regional development; Andalusia.

La política europea de Cohesión y la promoción del emprendimiento. El caso de Andalucía

RESUMEN: Este trabajo tiene como objetivo discutir el sentido, las tendencias y los logros de las iniciativas de fomento de la actividad emprendedora y de la PYME en Andalucía desarrolladas con el apoyo del Fondo Europeo de Desarrollo Regional (FEDER). La falta de cultura emprendedora, junto a las condiciones desfavorables del entorno empresarial, han representado tradicionalmente obstáculos estructurales para el desarrollo regional. Para afrontar ese problema, el papel de la política de fomento empresarial en el marco de la estrategia andaluza para el desarrollo regional se ha incrementado a lo largo de los sucesivos periodos de programación de la política europea de Cohesión. El artículo presenta algunas re-

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comendaciones para un diseño más eficaz y eficiente de la política de Cohesión en este ámbito basadas en la experiencia de Andalucía.

Clasificación JEL: R11; R58; L26.

Palabras clave: Política de Cohesión; FEDER; emprendimiento; desarrollo regional; Andalucía.

1. Introduction

The Cohesion policy is one of the most important European Union (EU) policies and also one of the most controversial. Thus, a debate exists about its effectiveness to foster regional development and achieve the convergence of regional economies (see, for instance, Rodríguez-Pose and Fratesi, 2004; Ramajo *et al.*, 2008; Sosvilla-Rivero and Herce, 2008; Villaverde and Maza, 2010; Rodríguez-Pose and Novak, 2013). The discussion on the role and significance of regional development policies, along with the changes experienced by the European regions in the last two decades, have led to re-thinking regional policies in the EU. As a result, the design, implementation and evaluation of the EU Cohesion policy have undergone fundamental changes in recent times (Bachtler and Wrenb, 2006; McCann and Ortega-Argilés, 2013).

One of the principles that inspire the EU Cohesion policy post-2013 is the requirement for all regions to develop a «smart specialisation» strategy. This notion is based on the idea that economic growth relies on innovation, entrepreneurship and risk-taking. Therefore, policy action should build these conditions and favour them as a way of stimulating the adoption, embodiment, and adaptation of new technologies (McCann and Ortega-Argilés, 2013).

In the last decades the European institutions have been implementing an Enterprise policy to tackle the significant deficiencies in entrepreneurship observed in EU countries and regions, especially in comparison to other economies, such as the USA (European Commission, 2003 and 2013; Leibovitz, 2003; Romero and Fernández-Serrano, 2005). In this context, Cohesion policy instruments have also been employed with an increasing commitment to promote entrepreneurial activity in the EU member states.

This paper explores the relationship between these two lines of European policy intervention, considering the role of entrepreneurship promotion as a strategic dimension within the Cohesion policy that might contribute to increasing its effectiveness. From this perspective, the paper analyses the experience of the European Regional Development Fund (ERDF) in Andalusia (Spain) in the period 1989-2013. The article is based on the study case for Andalusia (Faña *et al.*, 2013), within the project «Evaluation of the main achievements of Cohesion policy programmes and projects over the long term in 15 selected regions (from the 1989-1993 programming period to the present)»¹.

¹ This project was commanded by the European Commission and coordinated by the London School of Economics and the European Policies Research Centre of the University of Strathclyde. See Bachtler *et al.* (2013) for the overall conclusions.

The particular aim of this paper is to assess the role that entrepreneurship promotion has played within the ERDF strategy in Andalusia and get closer to the possible results obtained. Andalusia represents an interesting case study in this respect, since it is a comparatively low-income region in the European and Spanish contexts that traditionally suffers from a lack of entrepreneurial culture and a fragile business structure.

For the purposes of this paper, entrepreneurship policy is defined from a broad perspective including the actions aiming at:

- a) Stimulating the emergence of entrepreneurs and firm creation.
- b) Supporting an entrepreneurial orientation in small and medium-sized enterprises (SMEs) materialised in risk-taking, innovation, access to external markets or firm growth and, therefore, improving the «entrepreneurial quality» of the SME sector (Fernández-Serrano and Romero, 2013).

Though over the last four decades multiple initiatives in this policy field have been developed in Andalusia and implemented as part of national, regional and local programmes (Marchese and Potter, 2011), this paper will only consider the interventions within the ERDF framework.

The following section presents the rationale of the regional development strategy in Andalusia supported by the ERDF facilities. This section shows the importance given to the different priorities based on the diagnosis of the regional development problems. Section 3 describes the main interventions in the field of entrepreneurship policy undertaken within the ERDF framework over the successive programming periods. Section 4 assesses the results which might have been derived from these actions based on the evolution of different entrepreneurship indicators. Section 3 and 4 are based on the analysis of the ERDF programmes, planning documents and evaluations, on complementary information from the Directorate General for Planning and European Funds of the regional administration of Andalusia, on the views of experts interviewed and other statistical sources (see Faíña *et al.*, 2013: 136-139). Next, Section 5 draws some lessons from the Andalusian experience regarding the entrepreneurship promotion within the ERDF framework and the possible implications for the design of the Cohesion policy.

2. The role of entrepreneurship policy within the ERDF regional strategy in Andalusia

From the 1989-93 programming period to the 2007-13 period the total expenditure of ERDF and Cohesion funds in Andalusia was 26,869.4 million Euros (at a constant 2000 value) (Faíña *et al.*, 2013)². This substantial financial support received by Andalusia from European institutions —as an Objective 1 region, later Convergence region— has contributed significantly to regional growth and development over the last 25 years (Marchante and Sánchez-Maldonado, 2005; Lima and Cardenete, 2008; Sosvilla, 2009). Cohesion policy has favoured the process of convergence of the An-

² The initial allocations are computed for the 2007-13 programming period.

dalusian economy with the European Union standards. Thus, in 2011 the Gross Domestic Product (GDP) per capita (in PPS) of Andalusia reached 62.67 per cent of the EU-15 average while it was only 47.28 per cent in 1989.

In the late 1980s, Andalusia, a peripheral region in the Southern extreme of Europe, suffered from severe deficiencies in transport infrastructure. Communication networks with the rest of Spain were poor and the region was deeply disjointed internally. Furthermore, important deficits existed regarding environmental infrastructure, especially associated with water supply, distribution and purification (Zaragoza, 1991; Junta de Andalucía, 2007).

The region also had important weaknesses regarding human capital resources (Requena and Cantón, 2007). In addition, the lack of an entrepreneurial culture and business environment conditions unfavourable to entrepreneurship historically acted as major obstacles to regional development. As a result of this, the small average business size and the underinvestment in research, technological development and innovation (RTDI) have always been important deficiencies of this regional economy (Junta de Andalucía, 2000; Marchese and Potter, 2011). These factors have also conditioned the regional specialisation in light industries, distribution and commercial services, agriculture and tourism, that is, in general terms, activities of relatively low value-added (Guzmán *et al.*, 2000; Antúnez and Sanjuan, 2008; Marchese and Potter, 2011).

Today, a large part of these needs have been met. Andalusia has transport infrastructures comparable to those in many regions of the most developed European countries and the achievements in the field of environmental infrastructures have also been very significant (Faíña *et al.*, 2013). However, in the field of entrepreneurship, innovation and competitiveness, though some improvement has been observed, the results are more debatable.

The analysis of the programmes and the ERDF expenditure (see Table 1) reveals that, among all the important needs of Andalusia at the end of the 1980s, the regional development strategy focused on increasing the connectivity of the territory and facilitating access to other markets. This strategy aimed at mitigating the peripheral situation of the region and achieving economic growth through large investments in transport infrastructure projects³.

From this perspective, the deficiencies in the transport infrastructure were the main obstacle to regional development in Andalusia. Once the infrastructure bottlenecks were resolved, other important needs related to improving human capital, fostering entrepreneurship and stimulating RTDI or internationalisation could be addressed more effectively. In this way, the achievements in accessibility and internal connectivity led to a lesser emphasis on investment in transport infrastructure, though this remained a high priority over successive periods. In this way, the ERDF strategy evolved towards competitiveness, entrepreneurship and innovation in later programming periods. This has been a common pattern in other less developed regions in the

³ Projects such as the A92 motorway connecting Sevilla-Granada-Almería or the first high-speed train line —AVE— connecting Sevilla-Córdoba-Madrid are representative examples of this aim in the initial programming periods.

framework of the European Cohesion policy (European Commission, 2014). Environmental infrastructure and reforestation was the second most important priority in Andalusia, also remaining constant over the programming periods (Junta de Andalucía, 2007 and 2012; Faíña *et al.*, 2013).

Consequently, the strategy became more complex over successive programming periods and was enriched with other objectives and interventions in the field of social infrastructure (education and healthcare), as well as tourism infrastructure. This strategic evolution was reinforced especially from 2000-06 onwards. In the 2000-06 period, competitiveness, the knowledge economy and innovation became priorities and the 2007-13 programme consolidated these new priorities in accordance with the new Strategy for the Competitiveness of Andalusia (Junta de Andalucía, 2007) and the objectives of the Lisbon Strategy and the National Reform Plan of Spain.

This evolution in the strategy brought a change in the distribution of expenditure according to the eight thematic axes shown in Table 1. As pointed out in the introduction, the broad field of entrepreneurship and enterprise policy includes a wide range of interventions directly oriented to fostering business creation and business development (firm survival and growth, internationalisation and innovation). These interventions can naturally be associated with the following three thematic axes in Table 1: Enterprise (1), Structural Adjustment (2) and Innovation (3). The expenditure in these axes represents a reasonable approximation regarding the magnitude of entrepreneurship policy actions implemented with ERDF support, based on the information available⁴. The last two columns in Table 1 show the aggregate expenditure in these areas as percentages of the overall funds.

As can be observed, the main priorities remain infrastructure and environmental sustainability, even in the last programming periods. The regional strategy also paid especial attention to the needs regarding social and spatial cohesion, through investment in education, health and other social services.

The allocations and expenditure in the entrepreneurship and enterprise field of intervention grew over the programming periods⁵. The share of the ERDF programmes in the Community Support Framework (CSF) allotted to the enterprise and structural adjustment axes in the 2007-13 period (allocations) almost doubled the share in the programming 1989-93 period (expenditure). Moreover, when this comparison is made considering the previous two axes together with that of innovation, the share more than tripled.

⁴ Some interventions within these three categories were not oriented to promoting entrepreneurship and supporting SMEs' development. The Structural Adjustment axis includes some incentives for the location of large companies in the region, particularly, in specific problematic areas. Furthermore, the Innovation axis includes interventions in the public innovation system (public universities and research centres), which cannot be considered as part of the entrepreneurship policy either. However, some ERDF interventions in other axes could have also contributed to improving the entrepreneurial capabilities, for instance, the investments in educational infrastructures (secondary education, professional training and universities).

⁵ Data on «expenditure» for the 2007-13 programme is provisional. Consequently, it does not allow for an accurate comparison with previous periods.

Table 1. ERDF funds by thematic axes in Andalusia in percentages

Axes	1989-1993	1994-1999			2000-2006			2007-2013			
	CSF Total Exp	ROP Alloc	ROP Exp	CSF Total Exp	ROP Alloc	ROP Exp	CSF Total Exp	ROP Alloc	ROP Exp	CSF Total Alloc	CSF Total Exp (*)
1	0.8%	1.4%	2.1%	1.8%	4.8%	4.7%	4.1%	1.7%	0.9%	1.2%	0.9%
2	9.0%	4.9%	10.7%	11.4%	5.6%	8.1%	11.5%	20.9%	17.1%	14.8%	15.9%
3	1.8%	3.9%	2.2%	1.7%	3.2%	3.1%	6.8%	4.4%	2.6%	18.5%	2.4%
4	12.6%	26.5%	32.7%	37.0%	28.9%	24.3%	24.2%	29.4%	19.5%	21.2%	18.5%
5	1.4%	3.6%	4.5%	3.6%	3.2%	2.6%	2.1%	3.2%	2.7%	2.3%	2.5%
6	1.1%	2.9%	2.5%	2.0%	2.8%	2.5%	3.0%	8.7%	6.2%	6.1%	5.8%
7	73.1%	56.4%	44.9%	42.3%	51.3%	54.4%	48.1%	31.0%	50.5%	35.5%	53.6%
8	0.2%	0.3%	0.4%	0.3%	0.3%	0.3%	0.2%	0.6%	0.5%	0.4%	0.5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1+2	9.8%	6.3%	12.8%	13.2%	10.4%	12.8%	15.6%	22.6%	18.0%	16.0%	16.8%
1+2+3	11.6%	10.2%	15.0%	14.9%	13.6%	15.9%	22.4%	27.0%	20.6%	34.5%	19.2%

Source: Re-elaborated from Fafña *et al.* (2013) based on the ERDF expenditure table and complementary information from DG for the Planning and European Funds of Andalucía.

1. Enterprise, 2. Structural Adjustment, 3. Innovation, 4. Environmental Sustainability, 5. Labour Market, 6. Social Cohesion, 7. Infrastructure and Spatial Distribution of Economic Activity, 8. Unspecified. CSF: ERDF programmes in the Community Support Framework. ROP: Regional Operational Programmes. Alloc: allocations. Exp: expenditure. (*) Provisional data.

The table shows the expenditure and allocation in the initiatives within Regional Operational Programmes (ROP) and the overall expenditure and allocation in all the ERDF programmes in the CSF. In this respect, it is convenient to point out that the increase in the expenditure and allocation in the three entrepreneurship-related axes is more intense when all the ERDF programmes in the CSF are taken into account. This is due to some national programmes (i.e., regional incentives, the knowledge economy and the technological fund), in which Andalusia has had a high participation, but which were not part of the ROP. In this respect, the evolution in the regional strategy cannot be seen exclusively as the result of a change in the regional policy of Andalusia. It was also driven by the changes in the national and European Cohesion strategy.

3. Entrepreneurship policy interventions in Andalusia within the ERDF framework

The Andalusian strategy in the field of the entrepreneurship and enterprise policy has been oriented to four objectives: a) Providing financial support for firm creation

and development; *b*) Improving entrepreneurial capabilities and providing consultancy services; *c*) Fostering entrepreneurial culture and *d*) Improving the business environment.

The ERDF interventions have mainly been concentrated on the first category. However, investments in educational infrastructures (secondary education, professional training and universities) with ERDF support could have also contributed to improving the managerial capabilities of potential entrepreneurs. Furthermore, as will be commented upon later, some incentives were implemented with the intervention of ERDF to facilitate the access of SMEs to professional consultancy services. Regarding the promotion of entrepreneurial culture, there was an important role played by the European Social Fund (ESF). This supported many actions undertaken by the public foundation «Andalucía Emprende». Finally, the strategy to improve the business environment in Andalusia has been mainly oriented towards the creation of business and technology parks, as special microenvironments particularly favourable for the creation and development of SMEs. The impact of business and technology parks in Europe is controversial. Nevertheless, this instrument seems to have better results in less developed countries than in highly-developed ones and the experience with them in Spain has been assessed in positive terms (Romera, 2003; Barge-Gil *et al.*, 2011).

The actions implemented gained in complexity throughout the different programme periods, broadening the range of project types and using a wider range of intervention tools. In spite of classical regional incentives being used since the initial 1989-93 programming period as a mechanism to support structural adjustment, different types of actions backing the creation, expansion and modernisation of enterprises increased in importance over the periods. The implementation of this strategic change towards enterprise and innovation benefited from the application of new financial instruments in the last programming periods. JEREMIE and JESSICA funds were introduced in the 2007-13 period, providing a more efficient design of the incentive system. Moreover, RDTI were reinforced in the last programming periods through the support of research projects and infrastructure in universities, enabling the transfer of technology, knowledge and applied research.

Next, the main ERDF interventions in this field will be presented following the three main axes differentiated in the previous section: Enterprise Development, Structural Adjustment and Innovation.

3.1. Enterprise Development

Business development initiatives⁶ have been implemented by the regional government and the intermediary body in charge of managing the Andalusian Global

⁶ The regional and multiregional ERDF programmes in Andalusia invested €730.9 million (at a constant 2000 value) in the Enterprise Development axis in the 1989-2011 period, equivalent to circa 3 per cent of the overall expenditure across the study period.

Grant Operational Programme: the Institute for the Economic Promotion of Andalusia (IFA), later renamed Agency for the Innovation and Development of Andalusia (IDEA). In time, this regional development agency has acquired a central role in the management of business incentives⁷.

The interventions in this axis can be classified into four categories:

- Measures to facilitate the access of SMEs to funding. A selection of financial instruments has been used, adapted in each period to the changing financial and economic conditions.
- Provision of business infrastructure, particularly in industrial areas and business parks.
- Actions to facilitate and stimulate the access of SMEs to consulting services and technical expertise. These investments, although of relatively modest amounts, aimed at promoting entrepreneurial culture and increasing the managerial capabilities of SMEs.
- Actions to stimulate and support the internationalisation of Andalusian companies.

Table 2 points out some of the main interventions in Enterprise Development initiatives with ERDF support.

Table 2. Main interventions in the axis of Enterprise Development in Andalusia with ERDF⁸⁹

<i>Objectives</i>	<i>Instruments/interventions</i>
Facilitating the access of SMEs to funding	<p>1989-93 period: contribution to mutual guarantee societies (€17.85 million) and subsidies for interest rates.</p> <p>1994-99 period: contribution to mutual guarantee societies (€18.4 million); interest rate bonuses for SME loans (€82.6 million); reimbursable grants (loans) to young entrepreneurs for starting new companies⁸.</p> <p>2000-06 period: 1,347 warranties, 212 reimbursable grants and 5,266 interest subsidies (€3,340 million, 2.1 per cent of private fixed capital formation in the period)⁹.</p> <p>2007-13 period: grants to support firm creation, expansion and modernisation; new grants for supporting RTDI and innovative start-ups; JEREMIE fund (€235.7 million).</p>

⁷ The incentives for financial instruments were grouped into a single scheme from 2005 onwards. In the 2007-13 programme, the system of business incentives underwent major modifications with the aim of promoting business development and focussing on innovation, as a strategy to achieve a new growth model based on the knowledge economy.

⁸ Reported achievements include 151 companies created, with an induced investment of €45.1 million and 920 new jobs (0.14 per cent of private fixed capital formation in the period).

⁹ According to the results reported, 17,296 gross jobs were created (0.6 per cent of the employed population) and 133,746 jobs were maintained (4.8 per cent of the employed population).

Table 2. (Continue)

<i>Objectives</i>	<i>Instruments/interventions</i>
Providing business infrastructure	1989-93 and 1994-99 periods: infrastructure to provide SMEs with training and advisory services; infr. for basic services (telecommunications, electricity, etc.) in industrial areas and business parks. 2000-06 period: business and industrial parks in particular sectors (i.e., metal-mechanical, automotive components, chemicals, furniture) ¹⁰ .
Facilitating the access of SMEs to consulting services and technical expertise	2000-06 period: promotion of consultancy services in quality management and product design. 2007-13 period: «Cheque Innovación» (subsidy to facilitate and encourage the use of innovation consulting services for SMEs).
Stimulating internationalisation	Support for promotion campaigns, participation in fairs and technical and financial assistance for the internationalisation plans of SMEs by the Trade Promotion Agency of Andalusia (EXTENDA). Programmes by the Spanish Institute for Foreign Trade (ICEX) and the Chambers of Commerce.

Source: Elaborated from Faña *et al.* (2013).

3.2. Structural Adjustment

Various courses of action have been deployed in the field of Structural Adjustment¹¹ from classic incentives for private investments in backward areas, to incentives for industrial diversification, tourism development or the technological modernisation of businesses, as presented in Table 3.

Table 3. Main interventions in the axis of Structural Adjustment in Andalusia with ERDF

<i>Objectives</i>	<i>Instruments/interventions</i>
Developing backward areas	Incentives for attracting new investments to problematic areas (i.e., «Zonas de Acción Espacial» —ZAE— of Cádiz, Campo de Gibraltar, Jaén, etc.). Projects for industrial development focussed on priority sectors (food industry, electronics industry, ICT, etc.).
Strengthening competitiveness	Incentives for the technological modernisation of firms. Reinforcing supply chains, upgrading production technologies and generating high-value-added products.

¹⁰ An occupancy rate of 81 per cent was achieved for industrial sites. 5,995 jobs created (0.2 per cent of employed population in 2000-2006) with an induced investment of €18.5 million.

¹¹ The ERDF programmes — regional and multiregional — invested €3,310.5 million in the theme of Structural Adjustment up to the end of 2011, equivalent to approximately 11 per cent of overall expenditure in the 1989-2011 period.

Table 3. (Continue)

<i>Objectives</i>	<i>Instruments/interventions</i>
Fostering productive diversification	Incentives for industrial diversification. Incentives for tourism development. Creation of a brand image for Andalusia. Tourism diversification developing new forms of tourism different from «sun and sand» type, especially in inland and rural areas.

Source: Elaborated from Fafña *et al.* (2013).

3.3. Innovation

The actions in the Innovation axis have grown in financial importance over the programme periods and innovation has been established as a key strategic priority for the improvement and enhancement of business competitiveness in Andalusia¹².

The innovation strategy was oriented to promote and coordinate the regional innovation system. Three lines of action were developed with the aid of ERDF funding:

- Support of research projects and equipment endowment programmes, mostly in the public sector.
- Fostering knowledge and technology transfer and supporting applied research in sectors with a strong presence in Andalusia and other emerging sectors.
- Promotion of information and communication technologies (ICT).

Despite the ERDF emphasis given to RTDI in the later programming periods, the achievements stemmed mostly from the public sector, reflecting the lack of private sector capabilities. Nevertheless, different actions can be pointed out that directly targeted business innovation, as shown in Table 4.

Table 4. Main interventions in the axis of Innovation in Andalusia with ERDF

<i>Objectives</i>	<i>Instruments/interventions</i>
Supporting applied research and technology transfer	Technology Parks (i.e., Technology Park of Andalusia —PTA—, Scientific and Technological Park Cartuja 93 and Andalusian Aerospace Technology Park —Aerópolis ¹³).

¹² The amount of €1,151.3 million was allocated to the priority of Innovation through ERDF programmes up to the end of 2011, approximately equivalent to 4 per cent of total investments across the study period.

¹³ In the 1994-99 programme, the introduction of high-tech equipment facilitated manufacturing programmes in aeronautical factories, paving the way for the creation of the Andalusian Aerospace Technology Park (Aerópolis) in Seville in the following period and the consolidation of the aeronautical cluster in Andalusia. Aerópolis started its operations in 2003 and was conceived to support the Andalusian industry for large Airbus projects, e.g., the military transport plane A400M and the manufacture of high-technology components for the Airbus 350.

Table 4. (Continue)

<i>Objectives</i>	<i>Instruments/interventions</i>
Supporting applied research and technology transfer	Technology centres oriented to traditional and emerging sectors (i.e., Centre for Advanced Aerospace Technologies —CATEC— the Andalusian Centre of Innovation, Information and Communication Technologies (CITIC), and the Andalusian Stone Technology Centre —CTAP). Projects promoted by the Centre for Industrial Technological Development (CDTI), the Offices of Research Results Transfer (OTRIs) of the universities and the Innovation and Technology Transfer Centre of Andalusia (Andalucía CIT).
Promoting information and communication technologies (ICT)	Public contracts with private companies to implement ICT applications and systems for public services in education, health, environmental protection, etc.

Source: Elaborated from Faña *et al.* (2013).

4. About the overall impact of the ERDF initiatives on entrepreneurial activity in Andalusia

The ERDF interventions described in the previous section had direct effects in terms of start-ups, employment creation, investment, patents or other indicators that are reported as achievements in the ex-post evaluations of the programmes. However, a different issue is to what extent these efforts might have induced a change in the entrepreneurial activity from a macroeconomic perspective, strengthening the entrepreneurship culture and the competitiveness of the SME sector in Andalusia. This section will try to approach this key issue by observing a set of indicators on entrepreneurship and business development in the region¹⁴. Table 8 presents some summarised results at the end of this section. Due to limitations regarding data availability, most of the analysis will be focused on the 1995-2013 period.

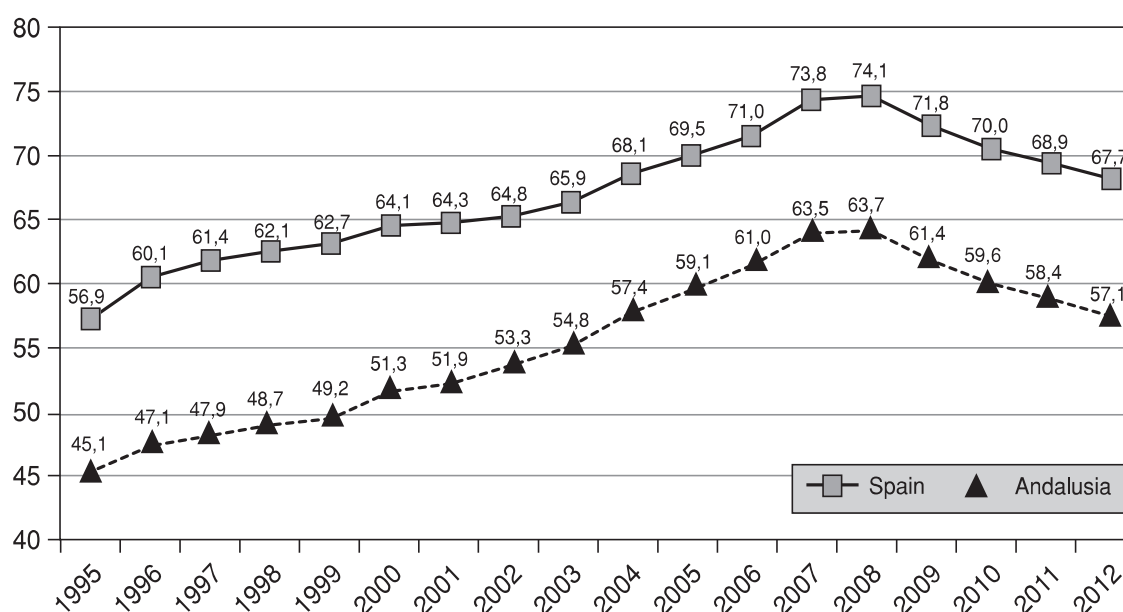
The level of business density in Andalusia has been traditionally among the lowest of the Spanish regions. Nevertheless, as a result of the trends in business demography (birth and mortality), business density —measured as the number of businesses per 1,000 inhabitants— has increased both in Andalusia and the whole of Spain in the last two decades (see Figure 1). The evolution of this indicator has followed the same pattern in both areas according to the business cycle: a steady increase throughout the expansion period (1995-2008) followed by a fall in the current crisis (2009-12).

The overall performance of this indicator in the last decade in the case of Andalusia has brought about a slight catching-up process with respect to the Spanish

¹⁴ It is not possible to establish a direct causal link between the ERDF interventions and the overall changes experienced in these entrepreneurship indicators, since many other factors intervened. Nonetheless, this analysis aims to check whether some changes can be appreciated in the entrepreneurial culture and entrepreneurial orientation of Andalusian SMEs —versus the traditional deficiencies in this area— that could be reasonably and partially attributed to the ERDF programmes.

standards. The business density in Andalusia was 79.2% of the Spanish average in 1995 and reached 86.0% in 2008. In this period, Andalusia reduced its gap with the national average by almost seven percentage points due to an especially intense process of business creation throughout the expansion. This catching-up process has been partially reversed in the 2009-12 period due to the economic crisis. Thus, Andalusian business density fell to 84.3 per cent of the national average in 2012. However, the gap between the Andalusian and national averages decreased by more than five percentage points over the whole period 1995-2012.

Figure 1. Business density (number of business per 1,000 inhabitants)



Source: Elaborated from DIRCE, National Statistics Institute (INE).

Regarding entrepreneurship rates, Andalusia has presented in the last decade figures comparable to the national average. The average rate of Total Entrepreneurial Activity (TEA)¹⁵ in the 2003-12 period has been 6.0 in Andalusia and 6.1 in the whole Spain (data from the Global Entrepreneurship Monitor — GEM— project). Andalusia shows lower rates than Cataluña (6.9) for the period, but higher than the Basque Country (4.8), a region which has traditionally been associated with a sound entrepreneurial culture. Within the current crisis period, Andalusia is indicating a slightly higher entrepreneurial activity than the national average: 5.8 in Andalusia and 5.6 in Spain in the period 2008-12. Moreover, in 2012 Andalusia presents the second highest TEA among all the Spanish regions, only lower than Cataluña. The entrepreneurship rate in Andalusia is higher than

¹⁵ The total early-stage Entrepreneurial Activity (TEA) is defined, within the Global Entrepreneurship Monitor (GEM) project, as the percentage of the 18-64 years-old population who are either a nascent entrepreneur or an owner-manager of a new business.

in the large EU economies (France, Germany or Italy), with the unique exception of the United Kingdom (see Table 5).

Table 5. TEA in the largest Spanish regions and EU economies

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Andalusia	6.2	6.0	5.7	6.1	7.2	6.7	6.3	4.0	5.8	6.1
Catalonia	7.7	5.6	6.8	8.6	8.4	7.3	6.4	4.0	6.8	7.5
Madrid	—	4.4	6.9	9.3	7.9	8.5	5.1	4.5	5.6	4.4
The Basque country	—	5.3	5.4	5.4	6.4	7.0	3.0	2.5	3.9	4.4
Spain	6.8	5.2	5.7	7.3	7.6	7.0	5.1	4.3	5.8	5.7
Germany	5.2	4.4	5.1	4.2	—	3.8	4.1	4.2	5.6	5.3
France	1.6	6	5.4	4.4	3.2	5.6	4.3	5.8	5.7	5.2
Italy	3.1	4.3	4.9	3.5	5	4.6	3.7	2.4	—	4.3
UK	6.4	6.2	6.2	5.8	5.5	5.9	5.7	6.4	7.3	9

Source: Elaborated from <http://www.gemconsortium.org/key-indicators>, Ruiz *et al.* (2013) and Xavier *et al.* (2013).

This could be partially explained by the current crisis and the extraordinary high unemployment rates —especially severe in Andalusia¹⁶— as factors causing an increase in the number of new entrepreneurs driven by necessity motives. According to the GEM data, necessity entrepreneurs represent 21.5% of the total number of entrepreneurs in Spain and 25.9% in Andalusia as an average in the 2008-12 period. However, the rate of opportunity entrepreneurship (with respect to the working-age population) in Spain and Andalusia are similar: 4.2 and 4.0 as an average in the 2008-12 period.

In the expansion period of 1999-07, the total number of businesses increased in Andalusia faster than in the whole of Spain (see Table 6). Though a significant number of businesses were oriented to construction in this period, the comparative positive performance of Andalusia within the national framework also applies when the construction sector is excluded.

The current crisis is causing a reduction in the number of registered companies in Andalusia and Spain, which is more intense in the former. However, overall, in the 1999-2013 period the total number of businesses in Andalusia increased by 31.2 per cent versus a rise of 24.9 per cent in the whole of Spain. These data reveal a good performance of Andalusia in terms of business demography. This conclusion is also valid when businesses without employees (self-employment) are excluded (see Table 6).

¹⁶ The unemployment rate in Andalusia was 36.3% versus 26.4% in Spain in 2013 according to the Economically Active Population Survey elaborated by the National Statistics Institute.

Table 6. Evolution of the number of businesses (average annual growth rate)

	<i>Andalusia</i>			<i>Spain</i>		
	<i>1999-07</i>	<i>2008-13</i>	<i>1999-13</i>	<i>1999-07</i>	<i>2008-13</i>	<i>1999-13</i>
Total number of businesses	4.25	-2.04	1.96	3.46	-1.67	1.60
Number of businesses (construction excluded)	3.78	-0.90	1.64	2.96	-0.57	1.37
Number of businesses with at least one employee	5.97	-2.93	2.70	4.41	-2.56	1.87
Number of businesses with at least one employee (construction excluded)	5.60	-1.06	2.78	4.15	-0.96	1.95

Source: Elaborated from DIRCE, INE (2013: data at 01/01/13).

The regional economy has experienced a certain positive structural change in the last two decades, with a slight process of diversification¹⁷ and some emerging sectors (aeronautics, business services and renewable energy). However, the industrial sector (with the exception of energy and construction) remained relatively modest in Andalusia, with its weight reducing from 11 per cent of regional employment and Gross Value Added (GVA) in 1999 to merely 8.8 per cent in 2011 (calculated from the Spanish Regional Accounts elaborated by the National Statistics Institute). Structural adjustment has failed in its attempt to build a sustainable manufacturing sector strong enough to significantly diversify the economic base of Andalusia and reinforce its potential to develop into a growth model focused on innovation and productivity. Diversification has mainly occurred through advances in tourism.

A major structural drawback of the Andalusian economy is the small average business size, leading to a problem of business fragmentation. The Andalusian productive system is characterised by a marked predominance of self-employees and microenterprises and a comparatively low participation of SMEs and large enterprises (see Table 7). In this respect, a positive trend was observed in the last expansion period with a relative decrease in the proportion of firms without employees in favour of micro-enterprises (1 to 9 employees) and a slight increase in the proportion of SMEs.

The crisis has stopped this positive evolution and the proportion of self-employees and microenterprises has increased together with the reduction in the share of SMEs. This is explained by the higher mortality rates observed for SMEs.

Andalusia has been traditionally characterised by its backwardness — in the national and European context — regarding RTDI. In this field, some progress has been

¹⁷ The index of relative specialisation — given by the ratio of the Herfindahl index in the region to the average value of this index across all the Spanish regions — shows a decline in the level of specialisation from 1.26 in the 1985-89 period to 1.11 in 2005-10 (Fañña *et al.*, 2013).

Table 7. Composition of the production system in Andalusia based on firm size (%)

	Andalusia			Spain		
	1999	2009	2013	1999	2009	2013
Without employees	56.97	51.58	52.35	55.11	52.67	53.44
Microenterprises (from 1 to 9 employees)	38.26	43.48	44.02	39.13	41.81	42.22
Small companies (from 10 to 49 employees)	4.21	4.31	3.14	4.97	4.68	3.61
Medium-sized companies (from 50 a 199 employees)	0.48	0.55	0.40	0.64	0.68	0.57
Large companies (200 employees and more)	0.08	0.08	0.09	0.15	0.16	0.16
Total	100	100	100	100	100	100

Source: Elaborated from DIRCE, INE.

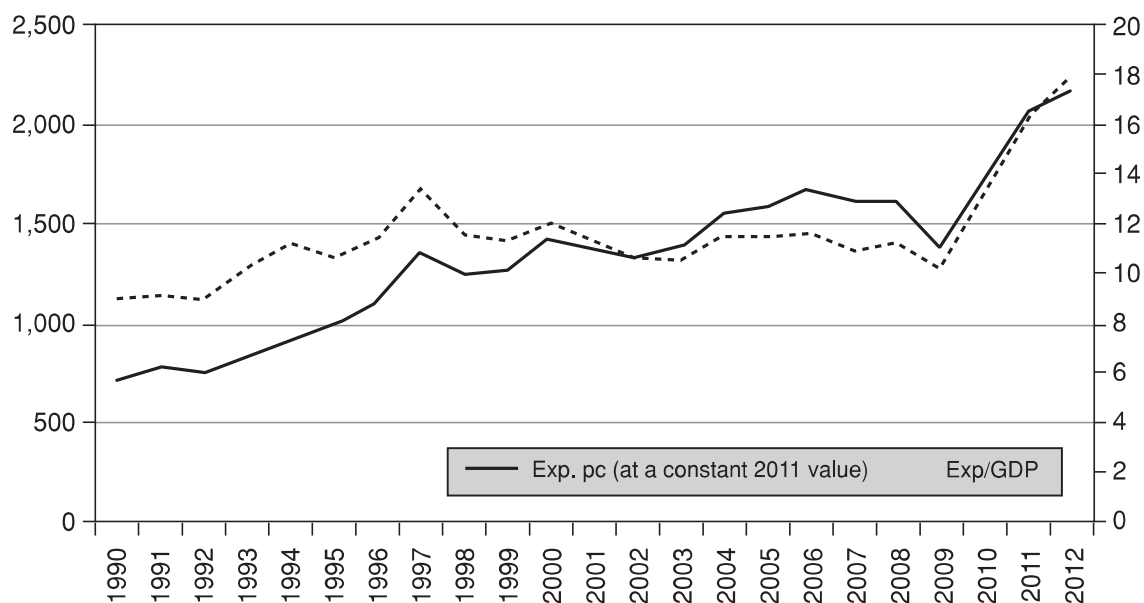
observed in the last two decades in line with the performance at a national level. However, a clear imbalance can be observed when comparing the innovation activities of the public and private agents. Substantial improvements have been achieved regarding the capacity of the public innovation system, but the actual impact of these actions in the private sector — fostering innovation in businesses — has not been so significant.

Nonetheless, the total internal expenditure on Research and Development (R&D) in businesses increased in Andalusia and Spain from 0.16 and 0.39 per cent of GDP in 1996 to 0.43 and 0.61 per cent in 2010 (calculated based on Eurostat data). The indicator for Andalusia more than doubled in the period considered, which illustrates a great effort by Andalusian companies. This performance allowed for a slight catching-up process with the whole of Spain regarding the business R&D effort (the distance to the Spanish figures has been cut down by 0.05 percentage points). Furthermore, the number of patents applications increased by 373 per cent in Andalusia from an annual average of 12.83 in the 1990-92 period to an average of 60.68 in the 2007-09 period. This increase was slightly greater than the one experienced at a national level, where these averages increased by 364 per cent (Eurostat data).

Furthermore, the strengthening of SMEs in Andalusia is leading to achievements in internationalisation. An increase in the export rate has been observed, moving from 8.8 per cent in 1990 to 17.6 per cent of GDP in 2012. The evolution of the export rate has been affected by the business cycle. Thus, throughout the expansion period in the late 90s and first part of the 2000s the export rate declined due to a growth model orientated towards the domestic demand. However, the Andalusian export ratio has risen very fast since the beginning of the crisis. Moreover, the improvement

in the export capacity of the Andalusian companies over time can be more clearly appreciated in the steady increase in the exports per capita which were in 2012 3.1 times larger than in 1990 (see Figure 2).

Figure 2. Andalusian exports of goods
(as percentage of GDP and per capita in thousand constant 2011 euros)



Source: Elaborated from data of the Institute of Statistics and Cartography of Andalusia.

Table 8. Some evidence about the changes in the entrepreneurial activity in Andalusia

Area	Traditional deficiencies	Recent trends and current situation. Evidence/results
Rate of entrepreneurial activity	Low entrepreneurial activity	TEA around the Spanish averages and higher than in the large economies in the EU (with the exception of the UK).
Type of entrepreneurship. Motivations	Preponderance of necessity entrepreneurship	Overall, similar composition of the total entrepreneurial activity to the whole of Spain. Slightly higher proportion of necessity entrepreneurs.
Business creation	Low business creation	Rates of increase in the number of business significantly higher than in the whole of Spain.
Business density	Low business density	Overall increase in business density (with a procyclical behaviour). Slight reduction in the gap with the values for the whole of Spain.

Table 8. (Continue)

<i>Area</i>	<i>Traditional deficiencies</i>	<i>Recent trends and current situation. Evidence/results</i>
Firm size composition	Excessive preponderance of microenterprises and self-employees (fragmentation). Scarce presence of large companies	Reduction in the proportion of self-employees (without workers). Increase in the proportion of microenterprises. Decrease in the share of SMEs.
Innovation	Low firm innovation	Increase in R&D in the private sector. Slight reduction in the gap with the effort at a national level. Increase in patent applications.
Internationalisation	Low export activity (especially for SMEs)	Overall increase in the export/PIB (with a procyclical behaviour). Steady and persistent increase in exports per capita.

Source: Own elaboration.

5. Analysis and lessons from the case study of Andalusia

The analysis of the Andalusian experience allows for some conclusions to be drawn about the role that entrepreneurship promotion can play in the Cohesion policy framework (see Table 9 for a summary). In this respect, different considerations can be made regarding the strategy definition, the programme design and implementation and the evaluation of the initiatives.

The development strategy in Andalusia focused on increasing the connectivity of the region and facilitating access to other markets through large investments in transport infrastructure. Once the most important infrastructures were constructed, the expected returns of new infrastructural projects declined and some over-capacity may have appeared in particular cases. The strategy evolved in this way over the successive periods, changing the focus of attention towards the field of enterprise and innovation.

This strategic option could have been justified based on recent theoretical developments. In addition to other socio-economic disadvantages, the peripheral position of Andalusia restricted returns from human capital, discouraging investment in education (Redding and Schott, 2003; López-Rodríguez *et al.*, 2007). The deficiencies in internal connectivity also limited the consolidation of an internal regional market with similar effects on the returns of human capital. Therefore, a distortion in the comparative wages of skilled and unskilled workers was induced (decreasing the relative wage of skilled workers), leading to a negative effect on highly-qualified workers. These deficiencies of skilled human capital were a major constraint

Table 9. Some lessons regarding entrepreneurship promotion within the Cohesion policy framework based on the Andalusian experience

<i>Level of intervention</i>	<i>Considerations</i>
Strategy	First, improving accessibility. Later, stimulating entrepreneurship and innovation.
	Evolution in the strategy over time: Looking for an optimal timing in the reorientation in priorities.
	Long run policies with a slow maturation process: It is not possible to develop an entrepreneurial culture in the short and medium run.
Programme design/ implementation	Adaptation to the regional socio-cultural environment.
	Convenience of a bottom-up approach and demand analysis.
	Benefits from a more integrated and coordinated approach.
	Preference for reimbursable financial instruments to avoid a subsidy culture.
Evaluation	Necessity of a culture of evaluation of the initiatives.

Source: Own elaboration.

on the development of economic activities oriented towards technology and innovation. In this context, the improvements in accessibility and internal connectivity could help to increase market potential and, therefore, the returns of human capital, stimulating the investment in education and the efforts to foster competitiveness (Faña *et al.*, 2013).

Consequently, the Andalusian strategy could have certainly represented the best possible approach considering the situation of this region at the end of the 1980s. More debatable is whether the change towards priorities in the fields of enterprise and innovation should have been more intense. Nowadays, though some progress has been made in this field as has been shown in Section 4, the main problems of the Andalusian economy are still related to business development, innovation and competitiveness.

In this respect, it is necessary to take into account that for an efficient use of the European Structural and Cohesion instruments it is also necessary for the productive system in a region to have enough absorption capacity. The Andalusian economy is characterised by significant weaknesses in its enterprise culture and business capabilities. Hence, regional companies may have not been prepared to assume a more ambitious enterprise and innovation policy.

One illustrative example of this is the case of the technological centres that have been created across the region to attend to the necessities of local industrial clusters. This initiative aimed at improving the transfer of research results to the business sector and improving the technological capacity of SMEs that had not the financial and human capabilities to assume R&D efforts on their own.

However, a number of centres are experiencing difficulties in consolidating their activities and assuring their viability. Many of the centres are oriented towards sectors and local businesses with a low demand for their technological services. Business owners in Andalusia often assume an unimaginative and unadventurous approach to the management of their companies and are reluctant concerning cooperation initiatives. This entrepreneurial culture poses an important obstacle for innovation along with the excessive presence of micro-enterprises and small firms. As Batterbury (2002) pointed out, a mismatch between the socio-cultural environment and policy design can reduce the effectiveness of public policies that are not adapted to the local conditions.

As a result, these efforts to stimulate innovation in the private sector are facing serious difficulties in their implementation in order to be effective. The key issue is developing a policy design, tailored to the characteristics and demands of the Andalusian business owners and companies, which effectively stimulates business innovation in the short run and contributes to the formation of a real culture of innovation in the long term. Furthermore, the productive specialisation of the Andalusia economy towards tourism and other, generally non-RTDI intensive, sectors constrains the achievements of the region in this area.

Deficiencies in entrepreneurial culture and entrepreneurial dynamism (birth, survival and expansion) have been a major structural drawback in Andalusia. The different actions developed within the ERDF programmes in the field of enterprise, innovation and structural adjustment have contributed to certain observed improvements, mainly in the last two decades. This effect of the Cohesion policy increasing entrepreneurship activity in economically backward regions has also been observed in other studies (see Sternberg, 2012, for Spain and Germany).

However, the entrepreneurial spirit has been historically poor in Andalusia, and significant socio-cultural obstacles make it difficult to obtain rapid and substantial results in this field. The role of education in instilling entrepreneurial attitudes and culture is crucial, but it needs to operate slowly. In this respect, there is another lesson that can be learnt from the Andalusian case: it is not possible to substantially change the entrepreneurial culture in a region with structural deficiencies in the short or medium run. Only in the long run could the actions reverse the situation and stimulate a vibrant entrepreneurial system. This has to be considered when evaluating the results of the programmes implemented.

In addition, in the design of the entrepreneurship policy, it is crucial to take demand considerations into account and to apply a bottom-up approach granting an important role to the private and intermediate agents. The supply side and top-down strategy could be an efficient approach for the development of large infrastructure projects. However, when the goal is stimulating firm creation and development, the primary role of public planning institutions might not lead to desirable results and it is recommendable to establish a more direct and intense dialogue with the intermediate public institutions and private agents on a decentralised basis. The questionable experience of Andalusia with the technology centres, previously presented, can be seen as an illustration of these considerations.

Entrepreneurship policy initiatives would also benefit from a more integrated and coordinated approach to policy design and implementation. This would facilitate the consideration of the complementarities/synergies and trade-offs between the projects supported by funding institutions at different levels (European, national, regional and local) and oriented to different fields of intervention (infrastructure, skills training, innovation and R&D, etc.).

Another lesson from the case of Andalusia is that, when trying to promote a real entrepreneurial culture in a region, the use of grants and subsidies implies the risk of creating a 'subsidy' culture and rent-seeking behaviours. In this respect, the use of reimbursable funds, credit guaranties or loans could have healthier effects for the stimulation of a real entrepreneurial culture.

Finally, it is convenient to develop a sound culture of evaluation of the interventions. Only in this way is it possible to detect best practices and learn from the errors in the design and implementation of the initiatives. Policy evaluation should be a tool for the introduction of corrective actions assuring the efficacy and efficiency of the programmes and interventions. The experience of Andalusia with the European Structural and Cohesion funds reveals that there is important room for improvement in this respect.

6. Conclusion

The relevance of entrepreneurship promotion has increased in the new Cohesion policy framework, which is inspired by the notion of smart specialisation. Regional policies seeking to stimulate a smart specialisation should foster entrepreneurship and technological diversification on the basis of the region's existing skills, technologies, and institutions (McCann and Ortega-Argilés, 2013).

This new approach calls for a better integration of the European Enterprise and Cohesion policies in order to develop an efficient framework to foster economic growth and social and spatial cohesion. In order to achieve this, a more profound theoretical understanding of the significance of entrepreneurship for regional development is needed together with further insights about the practical aspects of policy implementation in this field. In addition, the effectiveness of entrepreneurship promotion within the Cohesion policy framework requires these interventions to be tailored to the specific needs, capabilities and institutions of each region.

In this paper some conclusions have been drawn from the analysis of the experience of Andalusia with the ERDF and its implications from the perspective of the entrepreneurship policy. Though a great heterogeneity exists regarding the entrepreneurial cultures and SME sectors within the EU (Romero and Fernández-Serrano, 2007), some of these lessons could be relevant for other European regions, especially for other Mediterranean economies with similar problems to Andalusia.

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