



**ECONOMIC DEVELOPMENT IN SARDINIA:  
OVERCOMING THE INSULARITY GAP**

**Bianca Biagi  
Barbara Dettori  
Raffaele Paci  
Stefano Usai**

**WORKING PAPERS**

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2019 / 14

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CRENoS - CAGLIARI  
VIA SAN GIORGIO 12, I-09124 CAGLIARI, ITALIA  
TEL. +39-070-6756397; FAX +39-070- 6756402

CRENoS - SASSARI  
VIA MURONI 25, I-07100 SASSARI, ITALIA  
TEL. +39-079-213511

Title: ECONOMIC DEVELOPMENT IN SARDINIA: OVERCOMING THE INSULARITY GAP

ISBN: 978 88 68512 538

Prima Edizione: Dicembre 2019

Arkadia Editore © 2019  
Viale Bonaria 98 - 09125 Cagliari  
Tel. 070/6848663 - [info@arkadiaeditore.it](mailto:info@arkadiaeditore.it)  
[www.arkadiaeditore.it](http://www.arkadiaeditore.it)

# **Economic development in Sardinia: overcoming the insularity gap**

**Bianca Biagi**

*Department of Economics and Business, University of Sassari and CRENoS*

**Barbara Dettori**

*Department of Economics and Business, University of Cagliari and CRENoS*

**Raffaele Paci**

*Department of Economics and Business, University of Cagliari and CRENoS*

**Stefano Usai**

*Department of Economics and Business, University of Cagliari and CRENoS*

## **Abstract**

Under which conditions Sardinia - a peripheral island with a small population – can proceed along a steady path of economic development? This is the crucial question addressed in this paper which examines the economic and social situation of Sardinia within the national and the European scenario characterized by a strong polarization process fueled by agglomeration forces. The analysis suggests facing the demographic turndown by investing in education, innovation and local institutions in order to provide a better environment to citizens and firms and to exploit regional comparative advantages.

**Keywords:** Sardinia, regional growth, insularity, tourism

**JEL Classification:** R11, O18, L83

## 1. Introduction

Immediately after the Second World War Sardinia was one of the poorest regions in Italy and Europe, with a large rural economy and a relatively sizable industrial sector based mainly on mining. A large part of the population (one out of five people) was still illiterate, poverty was widespread and basic infrastructures were either missing or very modest. The implementation of the “Piano di Rinascita” applied the policy of growth pole and “induced industrialization” to the realization of big plants of the petrochemical sector and other heavy industries (Ruiu, 1998 and Sapelli, 2014). Since then, Sardinia’s welfare and productivity have profoundly improved, but not enough to close the gap with respect to the richer regions in both Italy and Europe. Sardinia catching up (together with that of the other Southern regions of Italy, Mezzogiorno from now on) to the North of Italy was limited to the period up to the first oil crisis at the beginning of the seventies (A’Hearn and Venables, 2013; Felice, 2011). Afterward, inequalities across Italian regions increased again and the Sardinian economic pace first slowed down, and later stopped altogether (Paci and Saba, 1998, Sideri and Usai, 2016). In the last forty years Sardinian relative economic growth has been rather disappointing: Sardinian income per capita was around 80% of the EU average in the eighties (with 15 member countries) and it is now well below that threshold, though in an enlarged Union (with 28 member countries).

This contribution attempts to answer the obvious question posed by this compelling evidence - why has Sardinia missed the opportunity to grow faster in the last forty years? - but it also gives some general hints on the Mezzogiorno backwardness.

The answer is not a simple one and is going to be articulated by resorting to the analytical framework of endogenous economic growth applied to the regional setting (Baldwin and Martin, 2004). Such a framework identifies a large set of self-reinforcing mechanisms that can potentially cause divergence rather than convergence. The world can polarize in a vital and creative centre, continuously fueled by increasing returns based on agglomeration economies, and a periphery sentenced to chase it.

Sardinia is clearly part of this periphery, from a strictly geographical point of view, other than from an economic one. Sardinia is a big island, with a relatively small population, which is quite remote from the mainland. In other words, those ‘first-nature’ geographical conditions slow down growth and development in various ways. Firstly, Sardinia suffers from an insufficient local demand, which is one of the main historical reasons to explain the presence of too many small and isolated companies unable to benefit from economies of scale and therefore, on average, unfit for exporting and investing in research and innovation. Secondly, Sardinia is physically cut off from all tangible networks across regions and countries, which form the basic platform for infrastructure in energy, transport and communication. Finally, Sardinia is a small regional economy dependent, for better or worse, on the economic dynamics and on the political strategies at the national level, that is Italy. A national economy that has been among the worst performers not only in the long-run but, most importantly, in the last decade after the financial and economic crisis in 2008.

This contribution attempts to offer an overview of the Sardinia's performance in the last decade and suggests a set of potential endogenous and exogenous determinants to explain it. The picture behind the poor macroeconomic performance will appear more complex than expected with positive as well as negative notes.

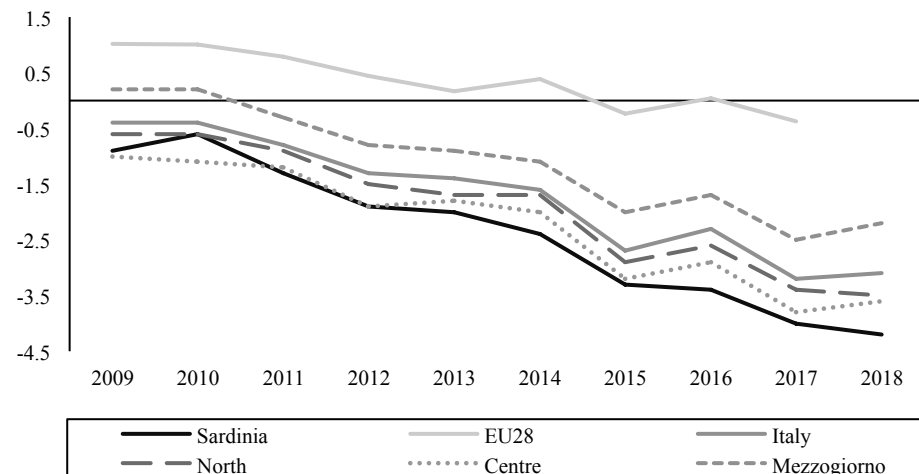
The first section is devoted to demography, a crucial pillar for economic sustainable growth. Then we provide a complete account of the main macroeconomic trends in the latest years with a comparison with Europe, Italy and Mezzogiorno. The fourth section is devoted to Tourism, a central sector in the Sardinian current economic system that can become even more crucial in the future. The fifth section offers an overall analysis of the labour market while the following section provides a comparative analysis of Sardinia competitive factors. The last section offers some conclusive remarks together with some policy implications and suggestions.

## 2. Demography

The literature on regional growth has emphasized the key role played by agglomeration externalities in driving the localization of firms and, as a result, the increase in employment and local economic performance (for a survey see Harris, 2011; Basile and Usai, 2015). To trigger this virtuous circle of firms' localization, externalities and growth a necessary condition is the presence in the local system of an adequate level of population able to sustain the internal demand and to provide sufficient labour force. With respect to this precondition, the scenario in Sardinia is not encouraging: only 1.65 million inhabitants are living in an island of 24 thousands km<sup>2</sup> generating quite a low density of 69 persons per km<sup>2</sup>. By comparison, Sicily, the other Italian island with a similar area, hosts a population of more than 5 million which implies a density of 196 inhabitants, almost three times larger than that of Sardinia.

The current demographic tendencies are challenging: the dynamics of the natural growth rate of the population presents a negative and progressively decreasing trend over the last decade (see Figure 1).

**Figure 1.** Natural growth rate of population (%)



Source: our elaboration on Eurostat data

In 2018 the natural growth rate of Sardinia is -4.2 (per thousand inhabitants), one of the lowest values in Europe. However, the most striking demographic feature is the huge increase in the old age dependency ratio (population 65 + / 0-14), which in 2018 reaches a value of 203%, much higher than the national average of 169%. This value indicates that in Sardinia for every one young individual there are two adults aged 65 and older; over the past ten years, this ratio has worsened at an extremely rapid pace both, in relative and absolute terms (in 2009 the ratio was about 148%, still lower than the national average).

The shrinking of the regional population has been partially compensated by an increase in the net migration rate so that the absolute number of resident population has remained almost stable over the last decade<sup>1</sup>. However, it is worth noticing that in 2018 the interregional net migration is negative: the number of out-migrants towards other Italian regions is about 1,100 units higher than the number of in-migrants coming from other Italian regions. The overall scarce capacity of Sardinia to attract new residents is partially compensated by the number of people moving from abroad: in 2018 the international migration shows a net positive balance equal to 3,637 in-migrants.

The spatial distribution of the population within the island over the last decades is characterized by a rapid and continuous relocation of the resident population from the inner areas - where the ancient Sardinian inhabitants used to live to avoid pirates and malaria, which afflicted coastal areas and cities (Corsale, 2019). This phenomenon of rural depopulation and reallocation gives rise to the abandonment of the agricultural land as well as the progressive loss of local services<sup>2</sup>. In conclusion, the demographic structure and trends of the Sardinian population depicted above cast serious doubt on the long run sustainability of the regional economic system and on its capacity to sustain the internal market and to promote agglomeration economies without a strong policy intervention both on demographic and economic ground.

### **3. Macroeconomic trends**

The dynamics of per capita GDP over the past decade clearly show how the global crisis hits strongly Italy and particularly its weakest regions such as Sardinia (see Figure 2).

At the beginning of the economic crisis in 2008, the index of GDP per capita of Sardinia compared to the EU28 average (EU28 = 100) was 79, while the corresponding value for Italy was 106. Ten years later, in 2017, the situation has greatly worsened: in Sardinia the index decreases at 69 while Italy declines at 96, in both cases a loss of 10 percentage points. Similar declining patterns are common to other areas: the North loses 9 points but with an index of 118 is still well above the EU average, while the Mezzogiorno decreases to 63. The decline of all Italian regions in the European ranking depends on the rapid growth of the newly associated eastern countries (a clear process of economic convergence) but also on Italy's failure to recover the pre-crisis production capacity: in 2017 the GDP level (in constant price) is still lower than that registered in 2008 in all geographical areas. The

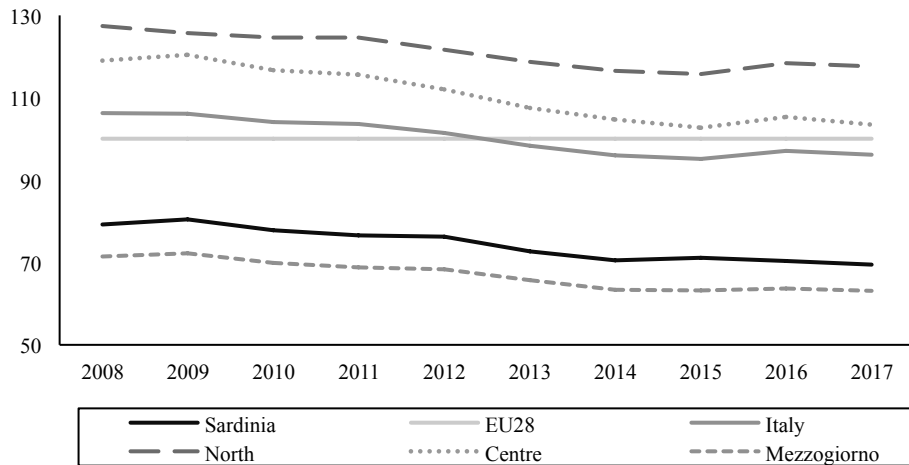
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<sup>1</sup> On the characteristics and determinants of interregional migration in Italy see Etzo (2011), Biagi et al. (2011), Piras (2017). For a more general survey see Biagi and Dotzel (2018).

<sup>2</sup> See Barca et al. (2014) for a complete overview of this critical issue in the whole of Italy and the relative strategy designed by the Italian government.

national economy is following a stagnating path; in this context, small, lagging and peripheral economies such as that of Sardinia (and of the Mezzogiorno) are suffering even more.

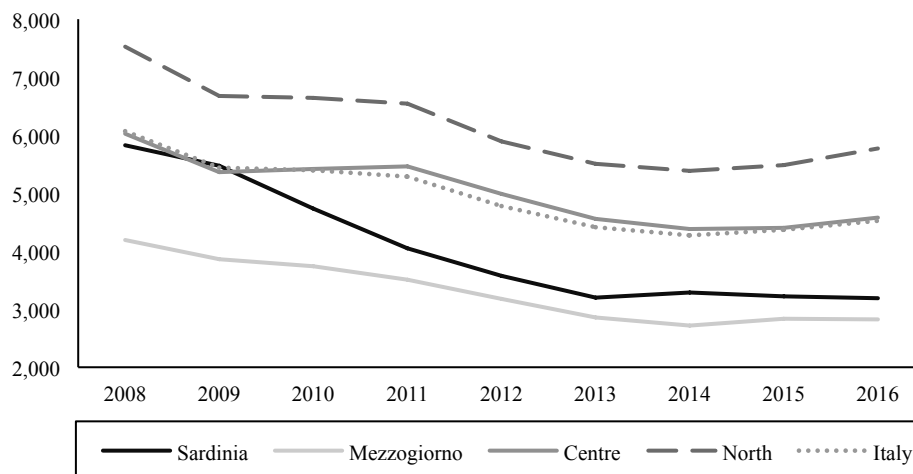
**Figure 2.** GDP per capita (PPS, index EU=100)



Source: our elaboration on Eurostat data

Further negative signals in the macroeconomic scenario appear by looking at the dynamics of gross capital formation, which includes both private and public investments (see Figure 3).

**Figure 3.** Investments per capita (euro 2010)



Source: our elaboration on Eurostat data

In 2008, in Sardinia per capita investment was higher than the national average (5,831 euro in 2008), in the following five years it decreases reaching the minimum in 2013 and remaining almost constant afterwards. In 2016, the investment in Sardinia is about 50% lower than that registered in 2008, above the Mezzogiorno but much lower than the Italian average. Conversely, in the northern and central regions the capital accumulation process is growing again.

The economic crisis strengthens the dualism of the Italian economy with the central and northern regions recovering and reacting faster respect to the rest of the country. The amount of capital accumulation is strictly linked to the type of firms operating in the regional economy as well as their relative sectorial specialization. In Sardinia 97% of firms are microenterprise (firms employing ten people or fewer) employing 64% of regional workers. The majority of those firms operate in sectors with low investment and innovation capacity. The sectorial composition of the economy is analyzed by looking at the gross value added by industry breakdown (see Table 1).

**Table 1.** Gross value added by industry breakdowns (%), 2017

<i>Sectors</i>	<i>EU28</i>	<i>Italy</i>	<i>North</i>	<i>Centre</i>	<i>Mezzo- giorno</i>	<i>Sardinia</i>
Agriculture	1.7	2.1	1.7	1.5	3.8	4.6
Industry	19.6	19.4	23.6	15.5	12.4	9.9
Construction	5.4	4.7	4.6	4.3	5.3	5.7
Trade, transport, accomodation, ICT	24.1	24.9	24.6	25.4	25.0	27.1
Financial, insurance, professional activities	27.2	28.4	29.0	30.4	25.3	24.3
PA, education, health	18.5	16.5	12.9	18.1	24.1	24.0
Arts, other services	3.5	4.0	3.6	4.8	4.1	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: our elaboration on Eurostat data

In 2017, the service sector produces in Sardinia almost 80% of total value added, a higher share than any other territorial areas. The contribution of the Public Administration (24%) and the wholesale and retail trade, transport, accommodation and ICT<sup>3</sup> sectors including

<sup>3</sup> It is worth noting that in Sardinia and more specifically in Cagliari there is an important cluster of ICT firms which has started in the early nineties thanks to a farsighted regional law (no. 21/1985) which established in 1990 the CRS4 (Center for Advanced Studies, Research and Development in Sardinia). Its presence was decisive in the future entrepreneurial experience of Tiscali (a web-based company, which was the first operator to launch free internet access in Italy following the liberalization of the telecoms market in 1998).



tourism is particularly high (27%). The manufacturing sector plays a marginal role respect to the northern regions (10% against 23.6%), conversely, the value added produced by the agriculture and breeding sectors (4.6%) is relatively higher. The different productivities can be interpreted as evidence of production specialization. The temporal evolution of the value added by sector shows the constant decline of the industry and construction sector (respectively, 13.4% and 8% in 2008) and a relevant rise of the service sectors such as trade, transport, accommodation and ICT, which have increased by 6% over the last decade reaching a similar share registered for the national context. The type of prevailing firms and their relative operating sectors explains the performance of the regional economy in terms of productivity, international trade, capital investment as well as investments in R&D.

#### 4. Tourism

One of the most relevant sectors in the production structure of Sardinia is the tourism industry, which plays an increasing role in the regional economic performance (Paci and Usai, 2002). There are several reasons to consider tourism as a strategic sector for regional economy. Firstly, it is one of the fastest growing industry in the world and its relevance tends to increase along with rising income levels, especially in the emerging economies such as China, India and Russia. Moreover, the decline in travel costs, the diffusion of point-to-point flights and the increasing ease of acquiring direct information on destinations are all elements that make the tourism sector the potential key driver for a small and peripheral region such as Sardinia. In addition, the inbound flows of tourist expenditures are equivalent to exports for the destination region since tourists represent external demand that acquires locally products and services.

Several studies remark the important role played by tourist flows in enhancing local efficiency through knowledge spillovers (Marrocu and Paci, 2011) and also by promoting trade (Brau and Pinna, 2013). The tourism industry has also the advantage of activating very intense and wide intersectoral multipliers in the local economy given the strong connections with other sectors such as agriculture, construction, transport, leisure and personal services (Manente, 2000)<sup>4</sup>.

Sardinia is one of the most prestigious marine destinations in the Mediterranean Sea. Despite the presence of various types of tourism, the island is well known for the luxury target (mainly located in the area of Costa Smeralda). Overall, with respect to other Mediterranean destinations, Sardinia results more expensive in terms of travel and accommodation. This is probably the reason why tourism flows in Sardinia have decreased consistently during the economic crisis 2008-2013 (- 13% over the five years period), especially in the domestic component (-31%; Table 2).

It is interesting to remark that during the same period Puglia, a relatively low-cost competitive destination, increases the number of tourism presences even for the domestic component (+4.2%). As a result of the political instability of North African and Middle East destinations, starting from 2014 Sardinia experiences an increase in tourism flows. An important role in this recovery has been certainly played by Regional public policies of

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<sup>4</sup> Consumption/production of the tourism good might also generate negative externalities with the consequences of reducing residents' quality of life (Biagi et al., 2019; Biagi et al. 2015; Biagi and Detotto, 2014).

supporting flight connections and promoting Sardinia in the international tourism markets. Over the period 2014-2018 Sardinia is the Italian region where the overnight stays in official accommodations increase the most reaching about 15 million of total stays (+40% in five years). The foreign demand result the most dynamic: with a share of 52% in 2018, for the first time, the overnight stays of foreign tourists exceed the national ones. The importance of the international component of tourism flows offers several advantages. First, the international market is almost infinite for a specific small destination such as Sardinia. Secondly, international tourists have, on average, a higher income and expenditure capacity than internal ones. Finally, preferring the low season where destinations are relatively less crowded, they generate a more efficient use of local supply capacity.

**Table 2.** Nights spent at tourist accommodation establishments (top ten regions in % of foreign tourists)

	<i>Number of nights (million)</i>			<i>5 years growth rate (%)</i>		<i>foreign tourists (%)</i>
	<i>2008</i>	<i>2013</i>	<i>2018</i>	<i>2009-13</i>	<i>2014-18</i>	<i>2018</i>
Prov. of Bolzano	27.7	29.0	33.3	4.8	14.6	69.0
Veneto	60.6	61.5	69.2	1.5	12.5	67.7
Lazio	31.7	30.7	36.7	-3.1	19.6	62.3
Lombardy	28.3	34.0	39.1	20.0	15.2	60.0
Friuli Venezia Giulia	8.9	7.8	9.0	-11.7	15.0	57.2
Tuscany	41.3	42.7	47.6	3.5	11.5	54.5
Sardinia	12.3	10.7	14.9	-13.1	39.9	51.6
Sicily	13.9	14.5	15.1	4.0	4.4	50.9
Campania	18.7	17.7	21.7	-5.3	22.4	48.1
Piedmont	11.6	12.7	15.1	9.8	19.0	43.9
Valle d'Aosta	3.1	3.0	3.6	-4.3	21.0	42.2
Italy	373.7	376.8	428.8	0.8	13.8	50.5

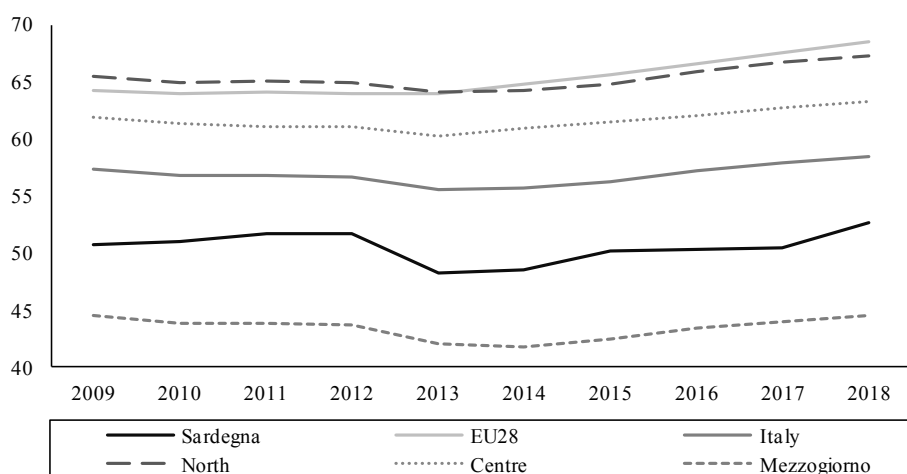
Source: our elaboration on Istat data

It is worth noting that Sardinia is characterized by a substantial presence of tourism accommodations supplied by the sharing economy as well as second homes, therefore a large amount of overnight stays are not registered in the official statistics. In a recent study, CRENoS (2019) estimates that the official demand counts around one third of the total for the domestic component, hence informal tourism should represent the residual two thirds. Considering also the foreign component, this means that the real total number of overnight stays in 2018 in Sardinia should rise well above 30 million. Hence, the economic impacts of tourism in the economy is surely significant and getting closer to the national level which has been recently estimated at 13% of total GDP (Banca d'Italia, 2019; WTTC, 2018).

## 5. Labour market

The recent evolution of the labour market indicators shows a clear recover after the downfall in the aftermath of the global financial crises, from 2009 to 2013. In the latest years, the employment rate (age 15-64 years) in Sardinia has increased by more than 4 percentage points reaching a value of 52.7% (see Figure 4).

**Figure 4.** Employment rate (15-64 years, %)

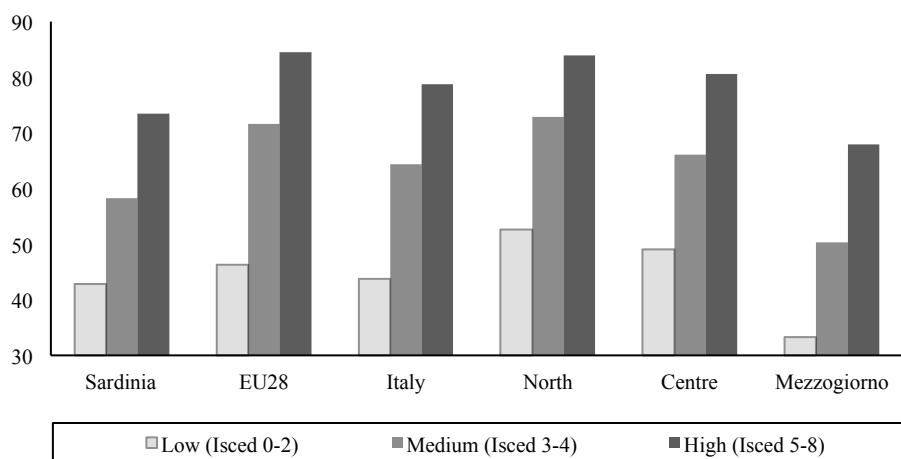


Source: our elaboration on Eurostat data

In absolute terms, this implies 28,000 additional employees. This positive performance, which takes the index above the pre-crisis level, is mainly due to a significant increase in the component of female workers. The opposite evolution is, quite naturally, exhibited by the unemployment rate, which has started from 13.4% in 2009, then increased to a maximum of 18.9% in 2014 and started to decline afterwards down to 15.7% in 2018. Nonetheless, there is still a particularly worrying phenomenon, such as the high level of youth unemployment (age 15-24 years). This rate reached its peak of 56.4% in 2016, one of the highest values among the European regions. After that, also thanks to specifically targeted policies, for example, to facilitate internship and apprenticeship, in just two years the youth unemployment rate declined by 20 percentage points reaching in 2018 the value of 35.7%, well below the Mezzogiorno's rate.

Some interesting insights come from the analysis of the employment rate disaggregated by educational attainment levels (see Figure 5).

**Figure 5.** Employment rates by educational attainment level (15-64 years,%)



Source: our elaboration on Eurostat data

In 2018, the employment rate in Sardinia of the population with a higher degree (Isced level 5-8) is 73.4 % compared to 58.3% for medium level (Isced 3-4) and to only 42.8% for low schooling level (Isced 0-2) level. This is an expected result which shows the importance of a high level of human capital to increase the probability of finding a job (and potentially a good one with higher wage and productivity). At the same time, it is worth noting that the employment rate for the low schooling population in Sardinia is much higher than in the rest of the Mezzogiorno probably due to the fact that some sectors (such as agriculture, constructions and tourism), characterized by a low human capital level, still play a relevant role in the regional economic structure.

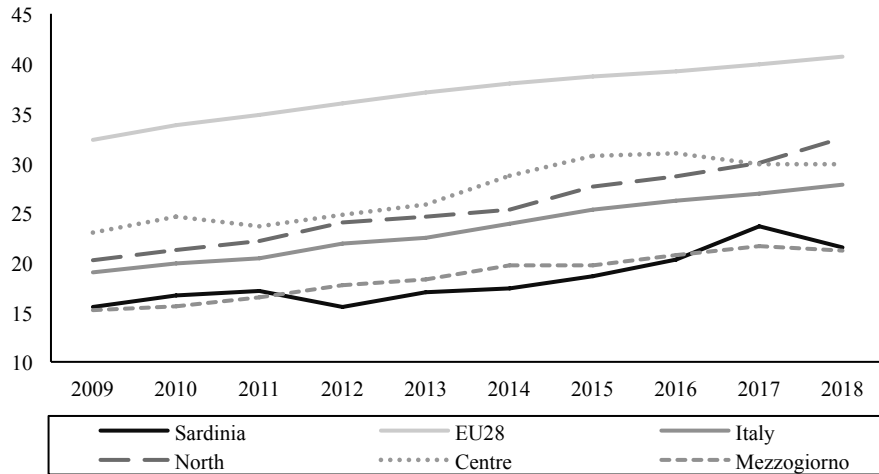
In general, the labour market conditions in Sardinia appear much better than in the rest of the Mezzogiorno while they are still behind the national average.

## 6.The competitive factors

There is a wide consensus among economic growth scholars that knowledge, embedded in both human and technological capital, plays the key role in determining the regional economic performance (Audretsch and Feldman, 2003; Marrocu et al., 2013). To evaluate the future perspective of the Sardinian economy is thus interesting to analyse the two pillars of the knowledge economy: human capital and technological activities.

The most used indicator to assess the human capital endowment in a region is the share of the population aged 30-34 with a tertiary degree (Isced 5-8). From Figure 6 it clearly emerges how Italy with only 27.8% of population with a university degree in 2018, is still far behind the European average (40.7%) although improving its situation over time.

**Figure 6.** Population with tertiary education (age 30-34 years, %)

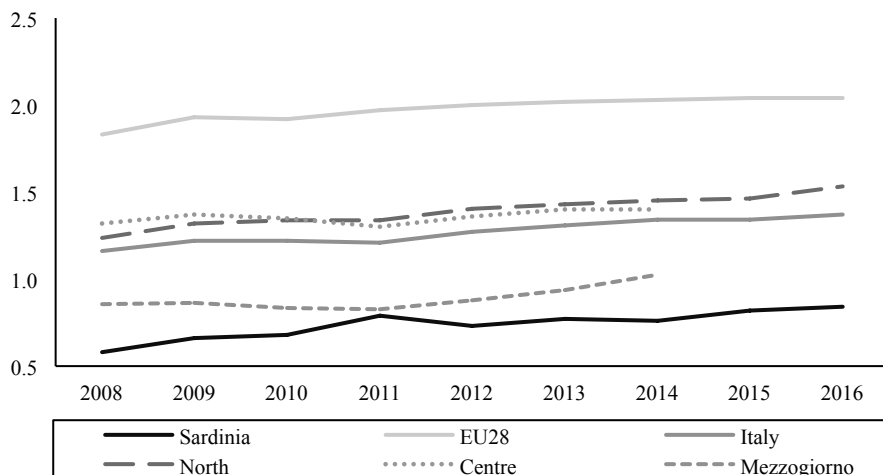


Source: our elaboration on Eurostat data

At the regional level, there are the well known differences between the North (32.5%) and the Mezzogiorno (21.2%) with Sardinia (21.5%) showing a pattern very closed to the other southern regions.

The second pillar is the technological activity, which can be proxied by R&D expenditure over GDP (see Figure 7).

**Figure 7.** R&D expenditure (% of GDP)



Source: our elaboration on Eurostat data

Also in this case, the situation of Italy (1.4% in 2016) appears negative when compared to the European average (2.0%). The technological activity in Sardinia is only 0.8% of the regional GDP and it is mainly due to the public expenditure, while the private component is very small. Indeed, the production structure of the island is mostly composed of micro firms operating in traditional sectors with very low research activity.

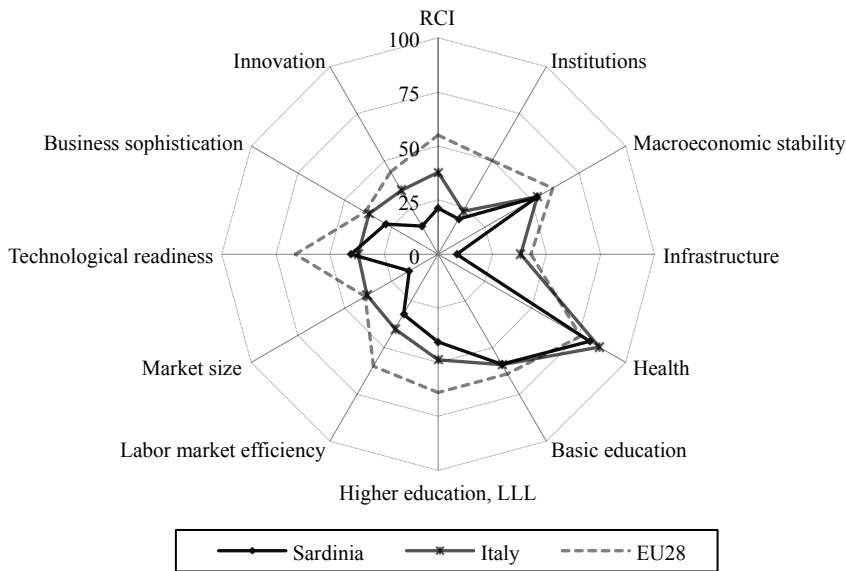
A complete and detailed picture of the competitiveness of the regions across Europe is provided by the European Regional Competitiveness Index (RCI), which investigates on the ability of a region to present an attractive and sustainable environment for citizens and firms. In the 2016 edition of the report 275 regions are considered and analysed over 3 sub indexes with 11 pillars: basic (institutions, macroeconomic stability, infrastructure, health, basic education), efficiency (higher education and lifelong learning, labor market efficiency, market size), innovation (technological readiness, business sophistication, innovation). The usual caveats apply on the capacity of a synthetic index, based on 74 statistical indicators, to provide a realistic representation of such a complex phenomenon as competitiveness. Nonetheless, it is worth looking at the ranking of the Italian regions for the RCI and its sub indexes to have a rough idea on the efficiency of the Italian regions. Sardinia appears very low in the European RCI ranking: 228<sup>o</sup> over the 275 European regions considered, varying from 213<sup>o</sup> for the innovation sub-index to 237<sup>o</sup> for the efficiency one. All the Italian regions are placed in the last part of the ranking with the lowest ranking of Sicily (237<sup>o</sup>) and the highest one of Lombardy (143<sup>o</sup>), which is nevertheless well below the European median.

To evaluate the most significant weaknesses of Sardinia with respect to the European and the Italian averages we report in Figure 8 the spider diagram for the three territorial units and the eleven pillars.

At first glance, it is clear that Sardinia shows a web always internal to the Italian one, signalling an overall inferior performance. The same result emerges for Italy compared to the EU (except for health). Looking in more details at the various indicators (computed in a scale with a range 0-100) Sardinia displays the worst situation in the infrastructures (value 9 with an EU average equal to 43) and in the market size indicators (value 15 vs. 39 for EU) confirming the analysis suggested in the previous sections.

The main disadvantage for a peripheral and scarcely populated island is the low level of the local demand, which hinders the development of a positive market circuit. Moreover, the remoteness and discontinuity from the mainland together with the low population density create a significant obstacle to the development of an adequate network of infrastructures like motorways, railways, energy pipelines and broadband connections. This situation generates additional costs for the existing firms and creates disadvantages for the localization of new enterprises. A last important pillar where Sardinia, but more generally Italy, is lagging behind is the quality of institution (19 vs 50 for EU) measured by the perceived corruption, quality, accountability and impartiality of the institutions. Also in this case the performance of Sardinia is better when compared to the other Mezzogiorno regions but it is far away from the most competitive regions of northern Europe.

**Figure 8.** European Regional Competitiveness Index



In short, Sardinia presents a stagnant economy, with a multitude of small or micro businesses and a high level of unemployment, especially among young people. Furthermore, its economic structure features an important presence of the primary sector but also by a hypertrophied public administration sector. Finally, there is a significant lack of tangible and intangible factors, which heavily conditions the competitiveness of the island's production system. This is demonstrated by the data on the export capacity of Sardinia in foreign markets. Sardinian exports and imports are mainly in the oil sector due to the presence of the Saras Spa, a huge refinery located near Cagliari but with headquarters in Milan. Oil products are more than 80% of total Sardinian sales abroad and chemical products amount to around 6% of exports. As a result, although the economic structure of the Sardinian system would suggest a relative specialization in primary products and their transformation, these represent a mere 3% of the total exports. Evidently, Sardinia still has a lot of potentials to express in the exploitation of its traditional comparative advantages.

## 7. Conclusions and policy

In conclusion, we have argued that Sardinian 'first-nature' geographical conditions (insularity, relative remoteness and peripherality) create the basis for 'second-nature' demographic and economic circumstances, which hinder its development potential.

The presence of a small local market is one of the reasons of an economic system based on too many small and isolated companies. Such companies are unable to benefit from economies of scale and therefore, on average, unfit for exporting and investing in research and innovation (Paci, 1997). Furthermore, the costs of starting and developing a business are too high in Sardinia, as well as in Italy as a whole, because of the burden of bureaucracy and

an unfavorable institutional context. Our human resources, especially the young ones, represent a largely idle potential, with levels of education and skills relatively modest in the European context.

Moreover, the policy of “induced industrialization”, result of the implementation of the “Piano di Rinascita”, based on the big plants of the petrochemical sector and other heavy industries, have not promoted an endogenous process of diffused growth. On the contrary, this process has favored an economic system dependent on the public sector and not rooted in its territory and its comparative advantages. A system based on a fragmented primary sector and an industrial sector, with negligible forward and backward linkages, unable to have any robust and lasting impact on local manufacturing firms.

Nonetheless, policies suggested by the European Smart Specialisation Strategy (Foray, 2015; McCann and Ortega-Argilés, 2015; Balland et al., 2019), are trying to reverse the trend in place. They attempt to give a stronger impulse to the renovation of the existing knowhow and to consolidate the positive factors of the regional economy. One example is the rural development program, which tries focus on a series of priorities including the promotion of knowledge transfer and innovation in the agricultural sector, the strengthening of competitiveness for the external markets and the creation of a diffused internal agri-food supply chain. Sardinia needs to diversify its economy, focusing on the innovation that derives from the bio and the green economy, and those measures useful for reducing the impacts of climate change on the territory, from the potential value of creativity applied to the most traditional sectors.

These policies have to be anchored to the tourism sector, which in the last years of crisis has shown an unexpected resilience, growing with significant rates in quantity and quality, with particular regard to international markets and the consequent seasonal adjustment. In particular, Sardinia needs a more defined strategy to fully exploit the direct and indirect potential of the interlinkages which can emerge from the hospitality sector, with careful consideration of the potential negative externalities that might arise from consumption and production.

Finally, Sardinia has to keep investing in those technological comparative advantages created in the early nineties in the ICT sector and more generally in the knowledge economy based on human capital. The presence of a potential cluster of firms, institutions and university research centers in this sector may prove a potential driving force for the island economy in the long term.

In conclusion, it is essential to reverse the current negative trend, with a new strategy for a demographic renovation and by investing in education, innovation, efficient infrastructure and quality of institutions, thus inaugurating a new dynamics that will allow Sardinia to exploit its opportunities made of current and potential comparative advantages. All these measures have to be implemented at once to give the island a chance to come out of the vicious circle of the current demographic and economic fragility.



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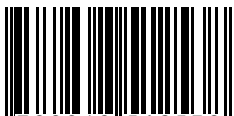
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ISBN 9788868512538



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