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## Low-cost Carriers and Regional Development: The Case of Sardinia

(Preliminary Draft Version)

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## **Abstract**

Low-cost carriers are nowadays a significant factor in European aviation. Apart from an airline's principal business objective to offer transportation services air transportation has wider economic implications. So far, some studies verified that air transportation generally has an important impact on regional development. However, the purpose of our paper is to shed light on the relationship between the market entry of low-cost carriers, tourism and regional development in Sardinia. Sardinia offers an excellent example for such an analysis due to its island position, which allows travellers to reach the island by just two modes of transport, its attractiveness for tourists and a number of airports easy to survey. In addition, the 'top-down development strategies' of the Italian government have been fruitless while the Sardinian economy allegedly only began to prosper with the market entrance of low cost carriers resulting in considerable growth of the tourism sector.

Our paper is structured as follows: After a brief introduction we firstly provide some insights on the historical development of the Sardinian economy and tourism sector. The following chapter deals with the emergence of low-cost carriers in Europe and particularly focuses on low-cost carriers in Sardinia, their choice of airports and destinations offered. In this chapter we also analyse the state of the Sardinian economy before the market entry of low-cost carriers and after and the resulting competitive responses by incumbents. We suppose that since then there has been structural change and remarkable growth of the Sardinian economy. A further aspect closely connected and scrutinised in the proposed paper is whether the 'jobs follow people'-effect, where an increase in the number of people (residents and visitors) within a region creates additional demand for goods and services, and hence employment and output, exists. The following chapter traces regional development in Sardinia and applies the Schumpeterian development theory. According to Schumpeter's theory one has to distinguish between economic growth and economic development. In this respect, an economic development strategy should be designed to provide direction in addressing the barriers to, and in capitalising upon opportunities for sustainable growth. In the Sardinian case there surely exists a dependency on external influences for economic development such as tourism. However, in order to ensure sustainable economic development a regional development strategy (accompanied by investment in infrastructure) needs to be developed. This question and other lessons and issues are highlighted and dealt with in the concluding fifth chapter.

*Keywords:* *Low-cost Carriers, Aviation Economics, Regional Development, Tourism, Sardinia*

*JEL Classification:* *L93: Industry Studies: Air Transportation*

*R11: Regional Economic Activity: Growth, Development, and Changes*

## 1. Introduction

“Sardinia is the second largest island in the Mediterranean Sea. It is located west of Italy and south of France . Sardinia’s pleasant climate, rugged mountains and spectacular coastlines makes it a very popular destination for people around the world. As has been said, Sardinia is an island, so your arrival options are either by a ferry or via an airport.” (I-net) → mild climate all year round

Links between tourism and aviation are obvious. Tourists use to an increasing extent air transport to travel to and from their destinations. Long-haul and countries separated by sea. This is even more so in case of peripheral regions which are highly attractive for tourists such as Sardinia. → island position allows travellers to reach the island by just two modes of transport, i.e. by sea or air transport.

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“More passengers travel by sea to Sardinia, Sicily and Corsica than by air, and so many tourists who visit these islands come in their own vehicle. Other factors also clearly influence this, such as the higher number of domestic tourists”<sup>1</sup>

Tourism and economic benefits (Forsyth (2006): Kunz Memorial Lecture, p. 5) → net economic gain from tourism possible!

## 2. Historical Background

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### 2.1 Development of the Sardinian Economy – The ‘Top-Down Development Strategies of the Italian Government’

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### 2.2 Development of Tourism in Sardinia – The ‘Bottom-up Strategy’

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## 3. Low-cost Carriers

Aviation policy is a key determinant of supply-related factors such as the price and availability of air travel, which in turn and alongside other general economic factors significantly influence demand for passenger air transportation services. Thus, aviation policy is also a key determinant of the total level of tourism, and of the patterns of tourism flows.<sup>2</sup> In addition, tourism is related to the tourist attractiveness of the destination in question. In order to have significant tourist potential destinations on the one hand require certain attractive and preferably unique scenic, climatic, historical or cultural

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<sup>1</sup> See Manera/Taberner (2006), p. 11.

<sup>2</sup> See Forsyth (2006), p. 4.

advantages and on the other hand adequate infrastructure to cater for tourist requirements such as sufficient accommodation of the required standard, adequate ground transport, restaurants, entertainment and shopping facilities, and so on.<sup>3</sup>

In comparison to other transport modes, air transportation offers a fast, flexible and convenient travel option even to the most remote places on earth and is at its most impressive when medium or long-haul destinations or routes separated by sea or other natural barriers are concerned. Moreover, recent liberalisation during the last decades, e.g., in the European Union, has been a main contributing factor to the worldwide boom in tourism. On the one hand liberalisation of European aviation markets since 1993 enabled low-cost carrier operations<sup>4</sup> – their influence on regional development and on tourism is the main subject of this paper – while on the other hand relatively deregulated charter (or non-scheduled) operations were the driving force behind a sustained boom in tourism to Southern European countries such as Spain during the 1960s and 1970s.<sup>5</sup> These countries encouraged tourism arrivals by relaxing regulatory constraints and allowing non-scheduled airlines to serve tourist destinations; thus, charter airlines soon played a significant role in connecting North European tourist-originating countries with holiday destinations in Southern Europe. Whereas most major carriers of non-scheduled passenger traffic are based in North European tourist-originating countries<sup>6</sup> Meridiana is one of the rare examples of an original charter airline which has been founded as Alisarda on 29 March 1963 by Aga Khan in order to promote tourism to Sardinia and which is based in a tourist-destination country.<sup>7</sup> Today, most people flying to Sardinia from outside Italy use low-cost carriers that have replaced non-scheduled airlines in their importance.<sup>8</sup> To conclude, the aviation system nowadays is an essential part of the tourism industry.

### 3.1 Emergence of Low-cost Carriers in Europe

Historically, European aviation operated in very restricted environment with national states dominating aviation policy and rigid bilateral agreements regulating air transportation between European states. This approach was primarily based upon the principle of reciprocity – as stipulated in the majority of bilateral aviation agreements.<sup>9</sup>

As early as 1951, Edouard Bonnefous, the President of the Foreign Affairs Committee of the French National Assembly and delegate to the Consultative Assembly of Europe, suggested the formation of

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<sup>3</sup> See Doganis (2002), pp. 196-200.

<sup>4</sup> See chapter 3.1.

<sup>5</sup> See Doganis (2002), p. 151

<sup>6</sup> See Doganis (2002), p. 157.

<sup>7</sup> Note that the distinction between scheduled and non-scheduled airlines has become increasingly blurred and 'artificial'. In fact, no formal distinction between scheduled and non-scheduled airlines has been made since the Third Package of air transport liberalisation measures coming into force in the European Union.

<sup>8</sup> See chapter 3.2 and 3.3.

<sup>9</sup> See Warnock-Smith/Morrell (2008), p. 82.

a European Transport Organisation with far-reaching competences. At the same time, Carlo Sforza, the Italian foreign minister at that time, submitted a plan for the creation of a European Single Aviation Market to the European Council of Ministers. However, both initiatives remained largely unsuccessful due to the differing opinions of member states and the Council of Ministers predictably rejected both proposals. Thus, the regulatory system of European aviation remained unimproved for the time being.

By the end of the 1970s the United States initiated the deregulation of domestic aviation and, moreover, began to negotiate more liberal bilateral aviation agreements on more and more routes. As these more liberal bilateral aviation agreements had a significant impact on several routes to Europe the pressure to reform the rigid European regulatory system increased.

While the US approach to implement 'open skies' was essentially bilateral and at least domestically some kind of seismic shift the European approach can be characterised as a gradual and comprehensive multilateral agreement by the member states of the European Union.<sup>10</sup> It is noteworthy, that the US domestic aviation market features a considerable volume and, in addition, is largely self-contained, so that US liberalisation measures applied to a large market and a large part of US airline networks from the outset.<sup>11</sup> In contrast, the impact of national liberalisation measures in Europe would have been negligible so that a multilateral approach was required.

The first tentative step towards liberalisation was the Council Directive 83/416/EEC concerning the authorization of scheduled inter-regional air services for the transport of passengers, mail and cargo between member states. This Directive introduced open access to inter-regional routes over 400 km operated by aircraft with a capacity of not more than 70 seats or alternatively a maximum takeoff weight of not more than 30 tonnes. However, the Directive only envisioned services between category 2 and 3 airports which are defined in Annex A. However, the 'Inter-regional Directive' had little impact on European aviation as a whole. Wheatcroft/Lipman (1986) estimated that merely 14 new services were inaugurated between regional airports, and many of these would have been allowed under existing bilateral agreements.

In 1984 the European Commission published its second Civil Aviation Memorandum containing several proposals for further liberalisation steps. However, despite the Commission's efforts the Council of Ministers adopted none of the proposals and remained reluctant on the issue of further liberalisation of the aviation sector. The passivity of the Council of Ministers embraced not just aviation but all different transport modes so that the European Parliament initiated proceedings against the Council of Ministers because of its failure to act in 1983. The European Court of Justice delivered its verdict in Case 13/83 on 22 May 1985 and the Court urged the Council to act on transport policy. Only after

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<sup>10</sup> See Doganis (2001), p. 38.

<sup>11</sup> Morrell (1998), p. 43.

this ruling the liberalisation process regained momentum. Following further proceedings against the Council of Ministers the Council enacted three consecutive liberalisation packages<sup>12</sup> in due course. The first package – representing the first community-wide breakthrough on aviation liberalisation – has been adopted in December 1987 and became effective on 1 January 1988. This package granted a more liberal fare regime, forced the abandonment of the equal sharing of capacity-requirement on routes served by airlines of two states and facilitated the market entry of new airlines by opening up market access. The second package of liberalisation measures became effective on 1 November 1990 and further liberalised the restrictions on pricing, on capacity and on market access. The third liberalisation package came into force on 1 January 1993. This package consists of three linked regulations establishing an ‘open skies’ regime for air services within the European Union. The third liberalisation package included a provision for the introduction of full unrestricted cabotage rights on 1 April 1997 so that nowadays all airlines based within European Union member states may operate with full traffic rights on any route within the European Union and without any capacity or fare restrictions.<sup>13</sup>

Among other things the liberalisation of European aviation had a significant impact on the level of competition. On the one hand liberalisation effectively resulted in an opening of the market and in numerous market entries of new airlines while on the other hand it also triggered a process of consolidation within the European Union. With the establishment of the ‘open skies’ regime for air services within the European Union airline ownership and control restrictions<sup>14</sup> usually stipulated in bilateral agreements suddenly became irrelevant for intra-European Union air services. As long as an airline is based within the European Union it may operate without any restrictions within the European Union. The irrelevance of the ‘nationality rule’ consequently resulted in several mergers and acquisitions of European airlines.<sup>15</sup> In addition, market exits of major independent airlines also occurred regularly so that the number of actually operating airlines remained relatively constant.<sup>16</sup>

However, liberalisation of the European aviation sector allowed the emergence of an entirely new business model based upon the role model Southwest Airlines.<sup>17</sup> The key features of the Southwest Airlines business model encompass low fares, no frills and more frequent flights on point-to-point routes while maintaining an extremely low cost base. On average, operating costs per seat-mile of low-cost carriers are between 20 to 40 per cent below that of other major airlines.<sup>18</sup> This is achieved

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<sup>12</sup> For detailed descriptions see Arndt (2004), pp. 49-58; Doganis (2001), pp. 38-43 and Morrell (1998). For a detailed overview of the three liberalisation packages and their contents see Arndt (2004), p. 57.

<sup>13</sup> See Dodgson (1994), p. 356 and Doganis (2001), p. 39.

<sup>14</sup> Nationality clauses are included in virtually all bilateral air service agreements. These clauses limit the airlines designated to provide the respective services to airlines owned and managed by nationals of the respective countries. For details see Chang et al. (2004).

<sup>15</sup> Chang/Williams (2002) list and describe strategic reactions of major European airlines to the new opportunities granted by liberalisation within the European Union.

<sup>16</sup> See Halm (2006), p. 11 and Dodgson (1994), p. 357.

<sup>17</sup> For a detailed description of the low-cost carrier role model Southwest Airlines see Doganis (2001), pp. 128-35 and Knorr/Arndt (2002).

<sup>18</sup> See Doganis (2001), p. 131.

by using a standardised fleet – most low-cost carriers use only a single type of aircraft, usually Boeing 737 aircraft, to reduce maintenance cost and ensure pilot’s flexibility. Their aircraft feature high density single-class seating with a low seat pitch and a low average age so that maintenance costs and fuel consumption are comparatively low. Furthermore, low-cost carriers achieve very high daily utilisation of aircraft and crews compared to other airlines. This is due to quick turnarounds and consistent staff management, i.e. maximally efficient and systematic staff roster, substantially lower crew costs and higher flexibility and productivity. Furthermore, low-cost carriers aim to return crews to their bases so that there’s no need for crews to stay overnight.

Pure low-cost carriers offer only point-to-point flights to usually smaller secondary airports and do not specifically aim at offering connecting flights; however, ‘DIY connections’ at low-cost carrier bases such as London Stansted are certainly possible.<sup>19</sup> The usage of smaller secondary airports has several benefits such as lower airport charges, no slot constraints, fewer delays, less congestion and short ground taxi times so that punctuality is generally easier to maintain.<sup>20</sup> In addition, low-cost carriers feature lower distribution costs as tickets are mostly sold via a direct online booking system – system-wide ticketless travel is the norm – and generate an increasing share of their revenue through commissions on ancillary sales.<sup>21</sup>

As some low-cost carriers operations depart from the pure low-cost carrier business model a classification of airlines is fairly difficult to compile. Some airlines identified as low-cost carriers are pure low-cost carriers, others are subsidiaries of established full service network carriers or airlines formerly operating non-scheduled (or charter) flights. While Ryanair can be viewed as a pure low-cost carrier easyJet, e.g., also offers connections to larger primary airports. Other low-cost airlines such as Air Berlin even offer frills or operate hubs, e.g., from Nuremberg, and intentionally sell connecting flights.

Beginning with Ryanair, which altered its business model to that of a low-cost carrier in 1991<sup>22</sup> more and more low-cost carriers entered the European aviation market after the liberalisation process picked up pace. Meanwhile, low-cost carriers account for a market share of roughly 24 per cent of all flights operated<sup>23</sup> while the largely absence of direct competition between low-cost carriers is a typical characteristic of low-cost carrier operations.<sup>24</sup> Meanwhile pressure to consolidate also hit the low-cost carrier market. The first victims of the emerging consolidation process were most low-cost subsidiaries of full service network carriers such as Buzz, go and Snowflake.<sup>25</sup> However, other low-cost operators that initially operated reasonably successful, e.g., Debonair, also exited the market.

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<sup>19</sup> See Papatheodorou/Lei (2006), p. 48.

<sup>20</sup> See Doganis (2001), p. 130.

<sup>21</sup> See Thomas (2005), p. 35.

<sup>22</sup> See Doganis (2001), p. 136 and Creaton, S. (2004), p. 89.

<sup>23</sup> See DLR/ADV (2008), p. 8.

<sup>24</sup> See chapter 3.2 for characteristics of low-cost carrier operations to Sardinia.

<sup>25</sup> See also chapter 3.4.

### 3.2 Market Entry of Low-cost Carriers in Sardinia – Airport Characteristics, Choice of Airports and Routes

Three airports primarily provide Sardinia's connection to Italy's mainland and other destinations: Alghero's Aeroporto di Alghero-Fertilia (AHO), which is located in North-western Sardinia, Cagliari's Aeroporto di Cagliari-Elmas „Mario Mameli“ (CAG), which is located close to Sardinia's capital Cagliari in Southern Sardinia and Olbia's Aeroporto di Olbia-Costa Smeralda (OLB) in North-eastern Sardinia. Furthermore, two further but much smaller airports – Tortoli-Arbatax (TTB) and Oristano-Fenosu – exist in Sardinia and are located in Eastern and Western Sardinia respectively. However, both airports do not play a noteworthy role for commercial aviation. In addition, a pure military airport – Cagliari Decimomannu (DCI) located to the North-west of Cagliari – is used for air combat and air weapons training of Italian and other NATO air forces.

Several low-cost carriers currently serve the three major Sardinian airports in Alghero, Cagliari and Olbia. Among them are smaller ones such as Jet2.com and all major low-cost carriers operating in Europe. Table 1 to Table 11 give a detailed overview about all low-cost carriers serving the three principal Sardinian airports in Alghero, Cagliari and Olbia.

**Table 1: Air Berlin routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Olbia (OLB)	Nuremberg (NUE)	2007	-	7,874,857 (2007)	23	-

Source: OAG.

**Table 2: easyJet routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Cagliari (CAG)	Geneva (GVA)	2007	-	8,881,404 (2007)	19	-
	London Luton (LTN)	2005	-	45,164,116 (2007)	6	-
	Milan (Malpensa) (MXP)	2007	-	3,985,683 (2007)	20	1 (2007)
Olbia (OLB)	Basel (BSL)	2007	-	13,415,528 (2007)	17	-
	Geneva (GVA)	2006	-	18,274,085 (2007)	13	2 (2007)
	London Gatwick (LGW)	2005	-	30,194,884 (2007)	5	2 (2007)
	Milan (Malpensa) (MXP)	2006	-	2,243,642 (2007)	27	-
	Berlin Schönefeld (SXF)	2005	-	55,300,215 (2007)	3	-

Source: OAG.

**Table 3: germanwings routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Alghero (AHO)	Cologne/Bonn (CGH)	2007	-	14,581,897 (2007)	14	-

Source: OAG.

**Table 4: Intersky routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Olbia (OLB)	Friedrichshafen	2006	-	4,188,927 (2007)	26	-

Source: OAG.



**Table 5: Jet2.com routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Cagliari (CAG)	London Stansted (STN)	2007	-	230,793 (2007)	32	-
Olbia (OLB)	London Stansted (STN)	2007	-	627,357 (2007)	32	-

Source: OAG.

**Table 6: MyAir routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Cagliari (CAG)	Milan (Orio Al Serio) (BGY)	2005, 2007	2006	4,290,033 (2007)	22	2 (2007)
	Bologna (BLQ)	2005	2005	2,337,244 (2005)	4	1 (2005)
	Venice (VCE)	2005	-	350.129 (2007)	3	2 (2007)
Olbia (OLB)	Milan (Orio Al Serio) (BGY)	2005	2005	1,688,349 (2005)	42	1 (2005)
	Bologna (BLQ)	2005	2005	752,383 (2005)	7	1 (2005)
	Venice (VCE)	2005, 2007	2005	88,231 (2007)	12	1 (2007)

Source: OAG.

**Table 7: Norwegian Air Shuttle routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Olbia (OLB)	Oslo (OSL)	2004	2004	5,324,434 (2004)	-	-

Source: OAG.

**Table 8: Ryanair routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Alghero (AHO)	Bremen (BRE)	2007	-	7,307,085 (2007)	15	-
	Rome (Ciampino) (CIA)	2005	2006	8,631,996 (2006)	-	-
	Dublin (DUB)	2007	-	31,144,534 (2007)	9	-
	East Midlands (EMA)	2007	-	42,118,237 (2007)	5	-
	Gerona (GRO)	2004	-	33,031,528 (2007)	8	-
	Frankfurt (Hahn) (HHN)	2003	-	56,892,696 (2007)	4	-
	Liverpool (LPL)	2006	-	39,671,896 (2007)	6	-
	Madrid (MAD)	2007	-	4,910,930 (2007)	18	-
	Dusseldorf (Niederrhein) (NRN)	2007	-	20,913,882 (2007)	13	-
	Stockholm (Skavsta) (NYO)	2007	-	37,425,391 (2007)	7	-
	Pisa (Galileo) (PSA)	2006	-	28,762,066 (2007)	10	-
	London Stansted (STN)	2000	-	152,332,821 (2007)	1	-
Cagliari (CAG)	Milan (Orio Al Serio) (BGY)	2007	-	2,565,874 (2007)	22	2 (2007)
	Gerona (GRO)	2007	-	13,681,622 (2007)	17	-
	Madrid (MAD)	2007	-	7,164,434 (2007)	21	1 (2007)
	Pisa (Galileo) (PSA)	2007	-	36,483,108 (2007)	9	-
Olbia (OLB)	Gerona (GRO)	2004	2004	974,521 (2004)	-	-
	Frankfurt (Hahn) (HHN)	2004	2004	1,547,554 (2004)	-	-
	London Stansted (STN)	2004	2004	2,403,454 (2004)	-	-

Source: OAG.

**Table 9: Transavia Airlines routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Alghero (AHO)	Amsterdam (AMS)	2004	2005	11,824,724 (2005)	21	-
Olbia (OLB)	Amsterdam (AMS)	2006	-	17,202,485 (2007)	15	-

Source: OAG.

**Table 10: TUIFly routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Cagliari (CAG)	Cologne/Bonn (CGH)	2006	-	30,431,257 (2007)	10	-
	Munich (MUC)	2006	-	23,870,305 (2007)	11	1 (2007)
	Nuremberg (NUE)	2007	-	211,720 (2007)	33	-
	Stuttgart (STR)	2006	-	23,371,074 (2007)	12	-
	Berlin Tegel (TXL)	2007	-	278,641 (2007)	31	-
Olbia (OLB)	Cologne/Bonn (CGH)	2003	-	53,961,487 (2007)	4	-
	Dusseldorf (DUS)	2007	-	28,299,439 (2007)	9	-
	Frankfurt (FRA)	2007	-	19,234,627 (2007)	14	-
	Hanover (HAJ)	2003	-	26,521,262 (2007)	11	-
	Hamburg (HAM)	2007	-	15,119,476 (2007)	16	-
	Leipzig/Halle (LEJ)	2007	-	335,829 (2007)	37	-
	Munich (MUC)	2005	-	28,386,404 (2007)	8	1 (2007)
	Stuttgart (STR)	2004	-	26,775,451 (2007)	10	-
	Berlin Tegel (TXL)	2004	2005	22,146,026 (2005)	-	-

Source: OAG.

**Table 11: Volare routes to Sardinia**

Airport	Airport	inaugurated in	discontinued in	ASK	Rank	Competitors
Alghero (AHO)	Milan (Malpensa) (MXP)	2007	-	2,615,931 (2007)	19	-
Cagliari (CAG)	Milan (Malpensa) (MXP)	2007	-	7,903,234 (2007)	20	1 (2007)
	Paris (Orly) (ORY)	2004	2004	8,003,385 (2004)	-	-
	Venice (VCE)	2003	2004	27,776,898 (2004)	-	3 (2004)
Olbia (OLB)	Milan (Orio Al Serio) (BGY)	2004	2004	5,487,134 (2004)	42	1 (2004)
	Venice (VCE)	2003	2004	9,440,769 (2004)	12	1 (2004)
	Zurich (ZRH)	2004	2004	464,804 (2004)	19	-

Source: OAG.

It is noteworthy, that nearly all low-cost carriers choose routes that no other competing airline serves; however, the two Italian carriers MyAir and Volare are exceptions as most of their routes are contested by other – often dominating – airlines. By contrast, just two of Ryanair's routes are contested by competitors – Ryanair's competitors on the route between Cagliari and Milan (Orio Al Serio) are Meridiana and MyAir while Cagliari to Madrid is contested by Iberia; however, Ryanair clearly dominates the latter route.

What is more, it clearly catches one's eye that the larger low-cost carriers divided Sardinia's three major airports among them and consequently dominate one of the three airports. Ryanair concentrates on routes to Alghero, but inaugurated four new routes to Cagliari in 2007, while easyJet and TUIFly concentrate on Olbia and operate several routes from Cagliari. Although both carriers serve Olbia they avoid direct competition: easyJet clearly serves other destinations than TUIFly.

Ryanair's inauguration of several routes from Olbia in 2004 and their discontinuation in the same year seems peculiar; however, as the airport in Alghero has been closed between 14 and 22 March 2004 due to necessary maintenance work Ryanair was forced to switch its flights to Olbia.

Figure 1: Passengers (2000-2007), AHO

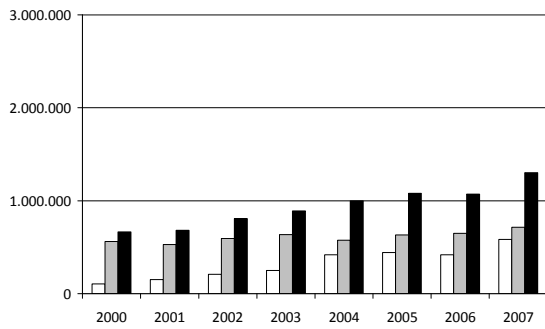


Figure 4: A/C Movements (2000-2007), AHO

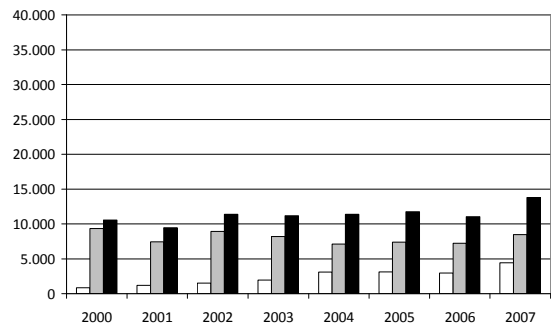


Figure 2: Passengers (2000-2007), CAG

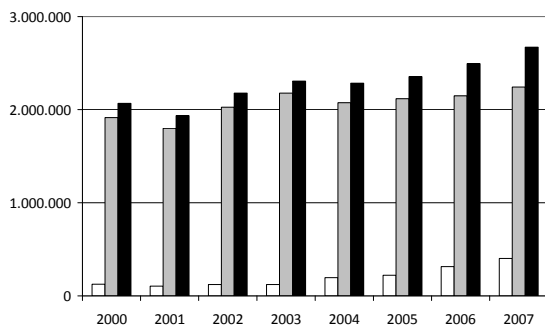


Figure 5: A/C Movements (2000-2007), CAG

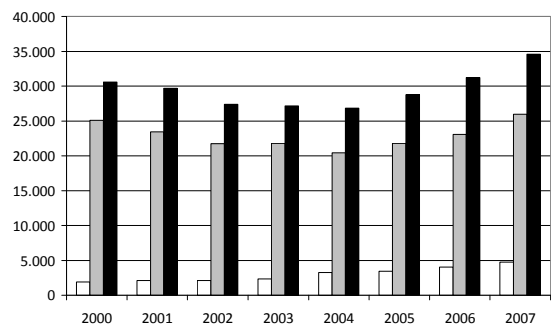


Figure 3: Passengers (2000-2007), OLB

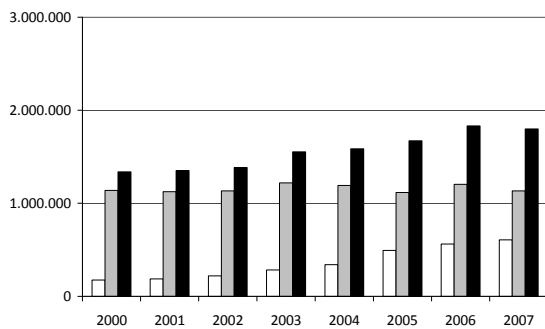
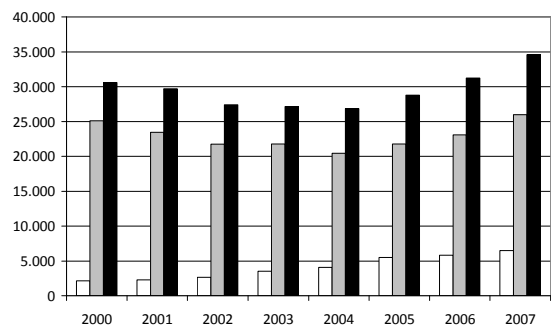


Figure 6: A/C Movements (2000-2007), OLB



Source: Assaeroporti

Figures 1 to 6 show the development of passenger volume and aircraft movements at the airports of Alghero, Cagliari and Olbia between 2000 and 2007 where white bars signify international, grey domestic and black total passenger volumes and aircraft movements respectively. All three airports clearly show upward trends in passenger volume, in particular in international passenger volume, while aircraft movements also increase during the time period analysed.

### 3.3 Low-cost Carriers' Effect on Tourism and on the Economy as a whole

**COST ISSUE** The appearance of low-cost carriers on the European market significantly reduced the cost of air transportation on several routes, and successively led to new tourism markets evolving.

**XXX** In general, lower air fares will result in more foreign tourists visiting the country/city being served by the respective airport and this means additional tourism expenditure.<sup>26</sup>

**ROUTE ISSUE** The inauguration of new routes by low-cost carriers often leads to entirely new or at least increased passenger volumes on these routes.

**LCC made air travel affordable! Supported by the trend to short breaks (DINKS)**

**XXX → LCC als neue Charter airlines (Spanien in den 1950ern und 1960ern) MEHR BEI FORSYTH!<sup>27</sup> → Fortentwicklung des Tourismus**

### 3.4 Competitive Responses by Incumbents

In general, the aviation market is unusual in its characteristics in some important ways and differs significantly from other markets, e.g., in its historically restricted and tightly regulated markets.<sup>28</sup> In addition, the turbulent market environment and the general dependence on governmental policy and other external factors that can be hardly influenced by airlines make airline operations and market development difficult. During the last decades, regular shake-up, shakeout, but also the development of new business models and, subsequently, some successful new market entries are characteristics of the aviation market. From the mid-1990s, established airlines have come under significant pressure in Europe as profitability collapsed and their traditional business model cast into doubt.<sup>29</sup>

With regard to Sardinia, several low-cost carriers have entered the market during recent years<sup>30</sup> and put significant pressure on established carriers such as Air One, Meridiana and Alitalia – the latter is currently teetering on the brink of bankruptcy. To make matters worse for established airlines, traditional charter airlines such as TUIfly (formerly used brand names are Hapagfly for non-scheduled operations and HLX for low-cost operations) have also moved into scheduled operations or now also offer seat-only sales.<sup>31</sup>

Meanwhile, established airlines adopted several strategies in reaction to the competitive threat from low-cost carriers.<sup>32</sup> These strategies entail the reduction of labour costs and further measures to in-

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<sup>26</sup> See Forsyth (2006), p. XXX.

<sup>27</sup> See Doganis (2002), p. XX and Forsyth (2006), p. 10.

<sup>28</sup> **QUELLE**

<sup>29</sup> See Dennis (2007), p. 311.

<sup>30</sup> See chapter 3.2.

<sup>31</sup> See Doganis (2003), p. 155.

<sup>32</sup> See Dennis (2007).

crease productivity, the transferring of selected services to regional partners, franchises and/or alliance partners, the formation of and joining of strategic alliances and the revision of fare structures and fare restrictions. Some established airlines even set up own low-cost subsidiaries – a strategy which must be deemed as largely unsuccessful in today's point of view: KLM's former low-cost subsidiary Buzz inaugurated services within Europe from London Stansted in January 2000 and has been sold to its competitor Ryanair in April 2003, go – the low-cost subsidiary of British Airways – operated its first flight in May 1998, then has been sold to 3i, a venture capital company, and go's management in June 2001 and subsequently to its competitor easyJet in May 2002. However, the worst of all examples is Snowflake – the low-cost subsidiary of SAS – which inaugurated operations in March 2003 with aircraft and crews seconded from the parent company and, hence, naturally did not achieve much cost saving. Instead, yields plummeted and Snowflake ceased separate operations in 2004 and now merely survives as a booking class on flights that are operated by SAS.

Furthermore, several more aggressive tactics to stall low-cost carrier competition and growth by means of legal procedures, by control of slots, facilities or capacity have been adopted by established airlines. During the last years, a series of pitched court battles about fees, subsidies and rights, i.e. in particular concerning so-called public service obligations (PSOs) occurred. The imposition of PSOs is bound by several requirements stipulated in Council Regulation (EEC) No 2408/92 of 23 July 1992 on access for Community air carriers to intra-Community air routes. According to Article 4 of Regulation 2408/92 a member state may impose a PSO on routes to airports serving peripheral or development regions in its territory or on a thin route to any regional airport in its territory. Furthermore, the routes have to be considered vital for the economic development of the region in which the respective airport is located. The member state is also required to demonstrate that other modes of transport cannot provide adequate and uninterrupted services when the capacity offered exceeds 30,000 seats per year. When imposing PSOs member states may specify certain minimum service levels (specific requirements, e.g., with regard to service capacity, frequency, aircraft size, etc.) and maximum fares, which airlines would not assume if they were solely pursuing their commercial interest. Article 4 of Regulation 2408/92 requires that the right to operate PSO services shall be offered by public tender either singly or for a group of routes to any licensed Community air carrier. The tendering process consists of two different tendering rounds. The initial tendering round asks for submissions from airlines that are willing to operate the tendered service and meet the specified requirements without any reimbursement. However, if no airline is willing to offer the tendered PSO service and/or the specified additional requirements a second tender is issued. In this case Article 4 of Council Regulation 2408/92 allows member states to pay financial compensation to the airline selected and, furthermore, to limit access to the respective route for a period of up to three years.<sup>33</sup>

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<sup>33</sup> See Williams (2005), Williams/Pagliari (2004) and Reynolds-Feighan (1995) for a detailed critique of the PSO mechanism.

With regard to Sardinia, PSOs have been introduced on seventeen routes and market access is restricted on seven of the Sardinian PSO routes while ten are open to competition. Table 12 provides an overview of PSOs currently serving Sardinian airports.

**Table 12: PSOs serving Sardinian airports by route, 2008**

Airport	Airport	Access	from	until	Single operator
Alghero	Bologna	restricted	1 March 2007	28 February 2010	Air One
	Milan	open			
	Rome	open			
	Turin	restricted	1 March 2007	28 February 2010	Air One
Cagliari	Bologna	open			
	Florence	restricted	15 January 2007	14 January 2010	Meridiana
	Milan	open			
	Naples	restricted	15 January 2007	14 January 2010	Meridiana
	Palermo	restricted	15 January 2007	14 January 2010	Meridiana
	Rome	open			
	Turin	open			
	Trapani	restricted	15 December 2006	16 December 2008	Air One
Olbia	Verona	open			
	Bologna	open			
	Milan	open			
	Verona	restricted	15 January 2007	14 January 2009	Meridiana
	Rome	open			

Source: European Commission.

All PSOs stated in Table 12 include provisions for service frequency, scheduling of flights, capacity, size of aircraft used as well as maximum fares. Concerning the latter, carriers operating under PSOs serving Sardinian airports must provide for subsidised fares that have to be applied to Sardinian residents, to Sardinian emigrants living outside Sardinia, disabled persons, students and persons under the age of 25 and above 70.

It is noteworthy that the Italian airlines Air One and Meridiana operate all restricted PSO routes serving Sardinia and almost all open PSOs, in particular those with a significant passenger volume and, hence, volume of available seat kilometres (ASK), i.e., the capacity supplied by airlines on a particular route. In addition, Air One and Meridiana are sharing the two most frequented routes to Sardinia, i.e., Cagliari to Milan (Linate) and Cagliari to Rome (Fiumicino). Both airlines account for a significant share of the market for flights between Sardinia and the Italian mainland. What is more, as can be seen from Table 13 the number and passenger as well as ASK volume of PSO routes served by low-cost carriers in 2007 is negligible. These are Alghero to Milan (Malpensa) served by Alitalia's low-cost subsidiary Volare (ranked 19 of all routes from Alghero), Cagliari to Milan (Malpensa) served by easyJet and Volare (ranked 20 of all routes from Alghero), Cagliari to Milan (Orio Al Serio) served by low-

cost carriers MyAir and Ryanair (rank 22) and Olbia to Milan (Malpensa) served by easyJet (ranked 27 of all routes from Olbia).

**Table 13: PSOs serving Sardinian airports by relevant airport pairs, 2007**

Airport	Airport	Access	ASK	Rank	Operators
Alghero	Bologna	restricted	22,729,607	12	Air One
	Milan (Linate)	open	98,860,174	2	Air One
	Milan (Malpensa)	open	2,615,931	19	Volare
	Milan (Orio Al Serio)	open	0	-	-
	Rome (Ciampino)	open	0	-	-
	Rome (Fiumicino)	open	75,202,557	3	Air One
	Turin	restricted	23,584,212	11	Air One
Cagliari	Bologna	open	54,366,817	4	Meridiana
	Florence	restricted	21,221,518	14	Meridiana
	Milan (Linate)	open	282,225,012	1	Air One, Meridiana
	Milan (Malpensa)	open	11,888,917	20	easyJet, Volare
	Milan (Orio Al Serio)	open	8,112,050	22	Meridiana, MyAir, Ryanair
	Naples	restricted	21,556,895	13	Meridiana
	Palermo	restricted	6,601,797	23	Meridiana
	Rome (Ciampino)	open	-	-	-
	Rome (Fiumicino)	open	242,183,394	2	Air One, Meridiana
	Turin	open	53,228,019	5	Meridiana
	Trapani	restricted	4,974,668	25	Air One
Verona	open	43,238,928	7	ALPI Eagles, Merdiana	
Olbia	Bologna	open	33,272,391	7	Meridiana
	Milan (Linate)	open	127,248,789	1	Meridiana
	Milan (Malpensa)	open	2,243,642	27	easyJet
	Milan (Orio Al Serio)	open	50,223	52	ALPI Eagles
	Verona	restricted	34,821,912	6	Meridiana
	Rome (Ciampino)	open	-	-	-
	Rome (Fiumicino)	open	55,311,010	2	Meridiana

Source: European Commission and OAG.

In our view it is questionable whether air services, e.g., from Alghero, Cagliari and Olbia to Milan (Linate) or Rome (Fiumicono) have to be 'sustained' by the imposition of PSOs. These and other routes currently included in the Italian PSO system are certainly commercially viable without the imposition of a PSO and it is doubtful whether the stipulation and/or conversation of politically desired minimum standards or maximum fares alone justify the imposition of PSOs on such high-volume routes. Such a justification would run counter to the underlying rationale for the imposition of PSOs, which is to sustain air transportation services to remote regions for the purpose of economic development. Still many inconsistencies in the approach and commitment to the provision of PSO air services exist across the European Union so that the imposition of PSOs seems arbitrary in many

cases.<sup>34</sup> Moreover, following our analysis the imposition of PSOs often seems to be the product of strong political pressures, e.g., of established airlines, trying to influence national policy in order to safeguard their markets.

## European Commission ruling

### 4. Regional Development

The following paragraph is organised as follows: We start with a brief introduction of Schumpeter's theory of development. Section 4.2 introduces to the socio-economic performance of the Sardinian economy in recent years. The next section explores the development of tourism and the so-called 'Jobs follow People'-Effect. This paragraph concludes with some remarks regarding the industrialisation strategy.

#### 4.1 Schumpeterian Development Theory – Economic Growth vs. Economic Development

The "Theory of economic development"<sup>35</sup> that has been introduced by Joseph A. Schumpeter can be seen as a starting point in the discussion of topics like entrepreneurship, innovation and development economics. Nowadays, there is a theoretical connection between the ideas of Dosi and Perez, since economic development can be characterized by path dependencies as well as by long- and short-term up- and downswings of the economy.<sup>36</sup> Nevertheless, even this modern line of reasoning can be traced back to Schumpeter's idea that economic development and business cycles are theoretically connected: They can be explained by the *endogenous* factor of entrepreneurship.<sup>37</sup> Of course, this line of thinking is in clear-cut contrast to the neoclassical paradigm that gives an *exogenous* explanation of economic growth. Whereas neoclassical growth models focus on the rise of production factors ("input logic") like capital, workforce or research & development, this causality is reversed by the evolutionary theory of Schumpeter.<sup>38</sup> The new combination of given production factors from already existing production processes moves into the centre of explanation. This task is done by entrepreneurs who outcompete given resources and realize a new factor combination. "Entrepreneurs" in the sense of Schumpeter are innovators, the bearer of new recombinations of *given*

<sup>34</sup> See Williams (2005), Williams/Pagliari (2004) and Reynolds-Feighan (1995) for a deeper analysis of PSOs in other member states.

<sup>35</sup> See Schumpeter (1934).

<sup>36</sup> See Dosi (1982) and Perez (2003).

<sup>37</sup> See Schumpeter (1939).

<sup>38</sup> Although the "New Growth Theory" refers to some extent to Schumpeterian thoughts of innovation these theories combine elements of market theory like imperfect competition with theories of market failure, e.g. R&D, knowledge as a public good. The most common growth models have been elaborated by Lucas (1988), Romer (1994) and Aghion/Howitt (1998).



amounts of factors of production. Exactly these entrepreneurs are the causal factor for wealth, productivity and net employment. As determinants of innovative behaviour one can refer to three variables of action that influence entrepreneurial activity: property rights, competencies and motivation.<sup>39</sup>

Indeed, this can be seen as a micro-economic foundation of economic development that is not dependent on linear relationships between R&D and innovation processes or governmental top-down strategies in order to foster economic growth. Obviously, there is a positive relationship between entrepreneurship and economic growth.<sup>40</sup> In conclusion, support for entrepreneurs means to support economic growth and development: “In the Schumpeter model of economic development, innovation, realized by entrepreneurs, is a necessary *and* sufficient condition for economic growth. Necessary means: without innovators, there is no growth. The condition is sufficient, because no other factors (“causes”) are needed to explain growth. This evidently is a bold argument, and especially so, if we consider, that in mainstream economics, entrepreneurship has failed to enter the long list of economic and non-economic variables that may influence economic growth”.<sup>41</sup> We will refer to this point later in our discussion, for the moment only one thing should be noted: According to this theory there is no need for external factors in order to promote regional economic development.

#### **4.2 Empirical Evidence – Structural Change in the Sardinian Economy**

Up to now Sardinia differs from the rest of Italy, not only because of its distinct history and culture, but also in terms of its economic development.<sup>42</sup> Especially in contrast to the prosperity of the industrialized centre-north of Italia the island has relatively high unemployment rates and low per capita incomes. In case of an individual consideration of the South Italian regions one has to recognize demographic as well as topographic aspects that might lead to different results in regional economic development. The Abruzzi, the Basilicata and Sardinia, for example, are characterized by a large coastal region and a mountain region which show different growth rates and population figures. In comparison to the regions of Molise, Abruzzi, Apulia, Basilicata and Kampanien, the weak points of the regions of Calabria, Sardinia and partly also of Sicily could be seen in the out-of-date economic development in nearly all areas. Activities of Sardinia concentrate and always concentrated mainly upon the cattle breeding and the agriculture. To gain control of the economy, the government began several projects in the 1960s and 1970s which should give to investors the possibility large-scale in-

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<sup>39</sup> See Röpke (1977).

<sup>40</sup> Metcalfe (2004); Bhidé (2000); Casson (1982).

<sup>41</sup> Röpke (2005), p. 4.

<sup>42</sup> See Hospers (2003), p. 630.

dustries to settle on the island. Nevertheless, this attempt had only moderate success, but shows the centralistic tradition of the Italian political system that is presumably a relevant reason for the unfavourable state of the regional economy. Later on, public investments and means of the European Structural Funds have tried to improve the economic situation of Sardinia. Taken together, there have been three mayor problems in the past that Sardinia had to face:

1. **Insufficient infrastructural equipment:** By suitable actions according to the public infrastructure in Sardinia it will be possible, for example, to create a solid economic basis which manifests itself in the agricultural and industrial sector as well as the tourism branch. For a long time Sardinia was a less developed region that was not in the position to improve independently the economy or to promote regional growth. But by the removal of public infrastructure like the water and electricity supply it should be possible to support local resources and potentials to improve the economic position of Sardinia.
2. **Insufficiently qualified manpower:** In comparison with other EU regional economies, the level of training in all IMEDOC regions is still low. About 60 % of the population aged between 25 and 59 have only a low level of training (below that of a student who has completed their secondary school studies).
3. **Weak entrepreneurial activity:** The excess of red tape and excessive bureaucracy in the public administration has been interpreted by citizens as a barrier against self employment that was perceived as too risky. Furthermore, the lack of institutional transparency has rendered entrepreneurship even less attractive.

The economy of the Sardinian region was mainly founded on key primary production sectors and is still handicapped by some weaknesses.<sup>43</sup> This can be illustrated by structural sector data on the importance of industry, agriculture and services (see Table 14).

**Table 14: Sector Shares in Percentage of Total Value Added (total\_100%).**

Sector	Year	1970	1980	1990	1999
Industry		33,4	28,7	24,3	21,4
Agriculture		9,3	5,7	3,9	5,0
Services		57,3	65,6	71,8	73,5

Source: Crenos, 2002.

The island's industry sector (i.e. manufacturing/mining/construction) is neither well-developed nor diversified. Instead, there is a highly specialization in heavy industries with large sunk costs (e.g. pet-

<sup>43</sup> See Paci (1999).

rochemicals) and in the construction industry.<sup>44</sup> Another characteristic which is most common to European island regions is a relatively high percentage of small businesses.<sup>45</sup> According to the European Commission this lower percentage of big companies can be attributed to factors like the reduced size of the islands' internal market or the reticence of more powerful companies and multinationals to open up there. Sardinia likewise shows a very high occupation density in the service industry. This distribution of value added and employment can be explained on the one side by the fact that Sardinia is strongly aimed on the tourism. On the other side the region can still be marked by the traditional and occupation-intensive sectors, e.g. retail trade or sea traffic. Most employment has been concentrated in lower paid service jobs. Together with a high number of lower paid land-based jobs, this may lead to concerns about the region as a "low-wage, low skill" economy. In addition, there has been a lack of financial investment into the regional innovation system. Measured by applications for patents over the years (1999- 2001), the level of research and technological development falls evidently behind the islands' corresponding states and behind European levels.<sup>46</sup> This sorry state of affairs might be attributable to the weaker role played by industry. As is shown in Table 15 there has been a positive development with regard to GDP growth and employment in the last years.

**Table 15: GDP Growth (Percentage Changes, Chain-linked Volumes, Reference Year 2000)**

	2001	2002	2003	2004	2005
<b>GDP Growth</b>	1,8	-0,4	2,9	-0,5	2,2
<b>Unemployment</b>	n/a	13,5	n/a	n/a	12,8

Source: Banca d'Italia (2007), pp. 103 and 116.

Overall, the region's economy has changed quite significantly in period between 2001 and 2006. There has been a period of GDP growth, although this was largely concentrated in the export sector. At the same time, the employment base of Sardinia has broadened, reflecting increased activity due to more household, visitor, and business demand. Or in other words, internal demand for employment has increased, as the region has become larger, in 2006 the unemployment rate is further decreased to 10.8 %. Actually, the region's production system is composed of 102,287 enterprises, but as already noted mostly belonging to the services sector (77,505).<sup>47</sup> However, seen before our theoretical background of economic development, the most positive aspect can be seen in the start-up of innovative sectors like ICT and Biotech. The sector of Tourism deserves a special mention, particularly with regard to the emergence of low-cost carriers and a flow of visitors that has increased constantly over the last years.

<sup>44</sup> See Rural-Europe (2002).

<sup>45</sup> See European Commissions (2003).

<sup>46</sup> See Manera/Taberner (2006), p. 19.

<sup>47</sup> InvestinItaly, [http://www.investinitaly.com/context\\_regfoc02.jsp?ID\\_LINK=45&area=44&regional=sardegna](http://www.investinitaly.com/context_regfoc02.jsp?ID_LINK=45&area=44&regional=sardegna).

### 4.3 The 'Jobs follow People'-Effect

According to the study of Manera/Taberner on the development of tourism in the Mediterranean Corsica, Sardinia and Sicily are destinations in the process of expansion. Measured by tourist arrivals, the number of overnight stays and the number of accommodation facilities in the years 1990-2002 there has been a strong growth of tourism in Sardinia as is shown in Table 16 to Table 18.

**Table 16: Tourist Arrivals to the IMEDOC Regions, 1990-2002 (in 1,000s)**

Year Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Balearics	6,349	6,518	6,660	7,131	8,250	8,468	8,586	9,280	10,820	10,800	10,800	10,143	9,623
Sardinia	1,302	1,351	1,339	1,249	1,324	1,383	1,435	1,536	1,589	1,685	1,722	1,811	1,897
Corsica	1,042	951	1,148	1,608	1,405	1,508	1,508	1,258	1,538	1,878	1,832	2,026	2,005
Malta	872	895	1,002	1,063	1,176	1,116	1,054	1,111	1,182	1,214	1,216	1,180	1,134
Sicily	2,733	2,772	2,476	2,376	2,750	2,917	3,188	3,220	3,424	3,611	3,958	4,069	4,029
IMEDOC	12,298	12,487	12,625	13,427	14,905	15,392	15,772	16,405	17,800	19,207	19,528	19,229	18,688

Source: Manera/Taberner (2006), p. 37.

**Table 17: Overnight Tourist Stays in IMEDOC Regions, 1990-2002 (in 1,000s)**

Year Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Balearics	34,600	37,692	40,139	43,232	47,113	46,883	43,386	44,274	46,349	54,460	53,428	53,565	47,335
Sardinia	6,854	6,988	6,815	6,476	6,941	7,404	7,550	8,117	8,369	9,115	9,476	10,240	10,215
Corsica	3,426	3,430	3,543	4,963	4,286	3,926	3,170	3,504	4,293	5,734	5,883	6,668	6,638
Malta	9,604	9,634	12,015	11,553	11,951	10,919	10,665	11,187	11,326	11,658	10,266	11,067	10,599
Sicily	9,257	9,479	8,112	7,750	8,908	9,370	10,069	10,292	11,140	11,959	13,410	13,730	13,147
IMEDOC	63,741	67,224	70,625	73,973	79,199	78,503	74,840	77,374	81,477	92,925	92,463	95,270	87,934

Source: Manera/Taberner (2006), p. 38.

**Table 18: Number of Beds in Hotels and Similar Accommodation, Camp Sites, Holiday Apartments and Other Types of Group Accommodation in IMEDOC Regions, 1990-2002 (in 1,000s)**

Year Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Balearics	386,918	388,999	389,449	380,796	382,815	384,953	388,510	394,473	398,805	406,876	411,129	414,120	415,264
Sardinia	108,455	115,932	118,944	120,006	122,466	127,653	132,609	134,466	137,677	140,106	147,229	150,842	158,042
Corsica	108,533	108,533	101,619	200,832	122,942	114,568	114,568	93,469	92,988	101,355	105,884	108,196	108,069
Malta	42,291	40,894	36,367	36,388	37,795	37,308	38,152	39,183	38,932	40,890	40,578	40,691	40,691
Sicily	104,569	110,329	104,918	105,304	112,631	113,172	115,297	119,807	118,166	121,429	126,717	133,564	139,313
IMEDOC	750,766	764,687	751,297	843,326	778,649	777,654	789,136	781,398	786,568	810,656	831,537	847,413	861,379

Source: Manera/Taberner (2006), p. 38.

Whereas parts of the IMEDOC<sup>48</sup> are generally losing ground, especially the islands of Corsica, Sardinia and Sicily show better tourism indicators than the Mediterranean's remaining countries<sup>49</sup>:

- The number of tourists has increased by 56 % (52 % for the Mediterranean as a whole; 49 % for Malta and the Balearics).

<sup>48</sup> The so-called IMEDOC network was set up in 1995 and unites the Mediterranean islands (the Balearics, Malta, Corsica, Sardinia and Sicily).

<sup>49</sup> See Manera/Taberner (2006).

- The number of overnight stays has increased by 54 % (73 % for the Mediterranean as a whole and 31 % for Malta and the Balearics).
- The number of tourist beds has seen a growth of 26 % (27 % for the Mediterranean and 6 % for Malta and the Balearics).

Taken together, these indicators correspond with a positive effect on tourist expenditure in general. Obviously, the structure of tourism has also been influenced by air transport development. Especially the introduction of LCC services to Sardinia has enhanced the quality of transport to the island. For northern Italy this effect has been shown by Signoria et al. (2002). They conclude that the advent of low-cost airlines has opened new tourist markets.<sup>50</sup> But the fact that the development of air transport and tourism relies heavily on each other might lead to certain path dependencies: economic prosperity and development will be very vulnerable to swings in commodity supply and tourist demand. Seen before the background that much of the increase in GDP can be attributed to these external factors, it is not surprising that employment has only grown slightly in Sardinia. Nonetheless, there has been a moderate expansion in regional employment as has been shown above. This expansion can be largely attributed to the internal demand for business and services within Sardinia. Total employment in these service industries has in fact increased rapidly. This reflects the so-called “jobs follow people” effect: The increase in the number of residents and visitors within a region creates additional demand for goods and services, followed by increasing employment and output. Of course, this shows the positive impact of tourism: While tourism reflects on the one hand additional demand for activities in the domestic sector, e.g. accommodation, retailing, recreational services, tourism expenditure contributes to the export earnings of the region on the other hand. In this regard tourism is an important industry within the export sector of Sardinia.

#### **4.4 Regional Development Strategy**

In fact, as was indicated by the figures of tourism, external factors in the economic environment (e.g. low-cost carrier, worldwide trend for agro-tourism) have underpinned regional growth in Sardinia more than local factors. But this implies that regional development is both quite dependent and vulnerable to external factors over which the region has no or little influence. Furthermore, the balance between economic specialization and diversification seems to be an issue of major importance for tourism economies, e.g. the (dis-)advantage of tourism monocultures as opposed to an inter-sectoral

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<sup>50</sup> Indeed, one has to recognise the fact that in places with more campsite accommodation, this might influence the chosen means of transport used to reach the island; see Renucci (2001). Up to now, still more passengers travel by sea to Sardinia than by air, in consequence many tourists arrive in their own vehicle. Of course, this is clearly influenced by the higher number of domestic tourists.

balance. One of these problems can be seen in the phenomenon of the so-called “Dutch disease”.<sup>51</sup> Let us take an open economy comprising of three sectors as the starting point: a traditional sector like manufacturing or agriculture, a fast expanding sector of natural resources, tourism in our case, and another sector producing non-tradable goods, services and construction. Furthermore, there is the central assumption that the prices for producing goods and services in the expanding sector as well as in the traditional sector are exogenously fixed on the world market. On the other hand the prices of non-tradable goods are determined by the domestic level. Released by the increasing activity of the export sector that is linked to an intensified use of natural resources the process of structural change will lead to two results: Firstly, production factors are removed from the traditional sector, e.g. capital and workers are attracted to the emerging export sector given the higher rents and wages that it offers. Consequently, the production of traditional non-tradable goods is shrinking. Secondly, in addition to raising real incomes by economic development, the internal demand for non-tradable goods as well as the incentives to produce them are growing. Correspondingly, there is an increase in the production of these goods.

Furthermore, the Dutch disease model points to inescapable negative repercussions<sup>52</sup>: If there is a high sectoral dependence then the regions internal economy is highly vulnerable to external disturbances. Or, to put it in other words, the structure of the economy may be distorted, because for investments in economic areas with a higher added value, employment, technical innovations and multiplication effects the incentive could be lost. The modern sectors in which the productiveness of the worker is higher do not invest because the yields on the home market are too low. The offer of technology thereby goes back, to certified manpower, infrastructure achievements and entrepreneurial activity decreases. Following the analyses of ... Sardinia and Sicily are the Italian regions that have moved towards the highest specialization in a limited number of sectors. Sardinia has clearly specialized increasingly in tourism in recent years which is confirmed by the expanding hotel and catering capacities. These arguments might indicate the need for a more actively managed development strategy in the future that should include the following aspects:

1. Due to the intensity of landscape and sea use by the driver industry of tourism, there is growing evidence of pressure on the natural environment. In consequence, on the one side there is growing concern about the negative externalities on the environment, on the other side the fear of a negative impact on economic growth caused by restrictions on the expanding tourism sector.

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<sup>51</sup> A precursor of this theory can be seen in the works of Prebisch (1960) and Singer (1950). The theoretical model was introduced by Corden/Neary (1982) and Corden (1984). In connection to the process of development see Auty (2001).

<sup>52</sup> See Capó/Riera/Rosselló (2005).

2. Due to an increasingly worldwide competitiveness that is more and more determined at the regional rather than national level, the scarce factor is innovative entrepreneurship in the sense of Schumpeter. Therefore, building an innovation system to support the region's specialist industries might be a key strategy: bringing together education, science and research institutions to work closely with companies. Clusters of knowledge intensive manufacturing and service industries can act as a magnet for new technology, investment and jobs.

In order to cope with these challenges the regional development strategy should follow an integrated, but two-sided approach: innovative and sustainable. The need for innovation refers to focus on value-added industry development. Moving Sardinia's economy up the value chain calls for a culture of business friendly administration and entrepreneurial spirit. By an intensification of value-added activity, which might be limited by the requirement of a more skilled workforce, a process of driving up higher incomes in the region's households could be initiated. E.g., based on the success of Tiscali this approach might foster many businesses in the region. Unfortunately, in this regard there is only insufficient public sector support. The public sector has only made limited efforts to promote entrepreneurship or R&D policies, only offset by the research work of the island universities. Simply measured in terms of government spending on R&D, the level of Sardinia is two times less than the EU average. In general, innovative backwardness and only modest technological activity has been reported in most regions of the South of Europe (Spain, Greece, Portugal, Southern Italy).<sup>53</sup> Coming back to Schumpeter, this is rather a problem of too low entrepreneurship than of availability of production factors. What is needed is the coaching of entrepreneurs.<sup>54</sup>

The need for sustainability refers to the region's local resources and should fit business needs as well as preferences of the local population. The attractiveness of Sardinia as a destination for tourism is mainly based on a combination of the atmosphere in the location, the supply of accommodation and recreational services, and by the natural resources.<sup>55</sup> In accordance to this the attractiveness is influenced by man-made services which are using the natural resources as a commodity like scuba divers, mountain biking, windsurfing etc. It is essentially these features that attract tourist expenditure and, in correspondence, raise local incomes. But despite these positive perspectives of tourism for the restructuring of Sardinia there might arise a negative side: While the tourism sector is generating additional income and jobs for the local economy, it also may have adverse effects on environmental and cultural issues. Clearly, negative environmental externalities play a decisive role in the quality of the tourism product. In this regard it is somehow problematic that Sardinia has experienced a "sea

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<sup>53</sup> See Moreno/Paci/Usai (2004).

<sup>54</sup> See Otter/Siemon (2007).

<sup>55</sup> See Pümpkin (1986) for success factors of destinations.

and sun" tourist phenomenon with a very high seasonality.<sup>56</sup> However, there have been successful activities in reducing the environmental stress by adopting a policy of diversification in accommodation and services supply.<sup>57</sup> As a result, some local municipalities achieved lower levels of seasonality of tourist flows regarding this approach as the basis to reach sustainable tourism conditions. Empirical findings support this view. Measured by two synthetic indicators of sustainability in tourism economics, the Human Impact Indicator (HII) and the Concentration of Tourist Accommodation (CAT)<sup>58</sup>, Sardinia shows satisfactory results in comparison to the IMEDOC regions<sup>59</sup>:

- Whereas the Balearics and Malta show the highest population congestion due to their floating populations (in the Balearics the real population is 16 % higher than the recorded population; 7.4 % in Malta), Corsica, Sardinia and Sicily have experienced a lower rise in their populations because the number of overnight stays per inhabitant is much lower.
- Although the CAT indicator for the IMEDOC region exceeds the Mediterranean average, Sardinia is well behind other islands counterparts with regard to land use as tourist accommodation.

## 5. Conclusions

Although Sardinia has been a region with ongoing expansion of tourism for more than fifteen years now, the island shows lower levels of population congestion and overdevelopment than most other regions in the Mediterranean. One reason for this might be that in contrast to other popular destinations like the Balearics the island of Sardinia can be still characterised as a 'newcomer' to tourism. Nevertheless, there is a relevant movement of resources directed to the tourism sector implying a more intensive specialisation in tourism industry. In consequence, the booming tourism sector takes increasing precedence in comparison to the manufacturing sector, which is, in general, more closely related to technological development but might become less relevant. This statement is clearly supported by increasing tourism indicators and changes in economic structure. The arguments put forward above and the statistics that have been presented confirm the existence of an island and tourism economy with a high degree of economic specialisation. This upswing should be used to foster the diversification of the economy as well because only a balanced sectoral structure provides insurance against a downturn in the export sector. In the course of the time originated in the comparative advantage of 'natural resources' it might be possible to suffocate creativity and initiatives of the local

<sup>56</sup> See Pulina (2002). The peak months are July and August with 54 % of the total annual tourist flows.

<sup>57</sup> Crenos (2003).

<sup>58</sup> The HII captures the real increase in a region's population when its floating population is included, formulated as:  $HII = \text{resident} + \text{floating population} * 100 / \text{resident population}$ . The CAT indicator measures the number of tourist beds per square kilometre in a certain region, formulated as:  $CAT = \text{number of beds (all kinds of tourist accommodation)} / \text{sq km of country}$ .

<sup>59</sup> See Manera/Taberner (2006), p. XXX for indicators and calculations.



**entrepreneurs.** Consequently, other abilities and potentials which are not connected to the export sector tourism have to be developed. A modern mixed economy needs a broad base of manufacturing, trade, and services in order to offer an improved standard of living to the population. For this reason, regional economic policy needs to find ways of diversifying the Sardinian economic activity away from too much dependence on 'natural resources' that may tend to delay the development of modern manufacturing and services.

**"Airline Liberalization should be the cornerstone and the motivation for the development of sustainable tourism."**

**low-cost carriers a threat to traditional charter airlines.**

**LCC may easily switch routes → certain dependency (→ share of LCC passengers of total passengers at Sardinia's airports! → section 3.2)**

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