2017, Vol. 18, No. 2

Technical and economic efficiency in some Italian farms: an analysis in two Italian islands

Nicola Galluzzo
Association of Geographic and Economic Studies on Rural Areas Via Salaria per L'Aquila 76 Scala A Rieti, Italy, asgear@libero.it

Abstract

In two major Italian islands, such as Sicily and Sardinia, located in the Mediterranean Sea, are concentrated almost 17% of total Italian farms. The purpose of this research was to assess since 2004 to 2014 by a quantitative non-parametric model such as the Data Envelopment Analysis the technical efficiency in farms belonging to the Farm Accountancy Data Network. Sardinian farms have had better results of technical and scale efficiency than Sicilian agricultural enterprises due to a different farm size and to an unsimiliar amount of financial payments disbursed by the Common Agricultural Policy.

Keywords: Data Envelopment Analysis, Common Agricultural Policy, less favoured areas, rural areas, FADN, rural development.

1. Introduction

Italian agrarian landscape is characterized by hilly and mountainous areas where are scattered lots of small farms able to produced ag-commodities in a perspective of multifunctionality in terms of environmental protection. Italian rural areas are very important in order to produce certified quality food, recognized as geographical indications and traditional specialties by the European Union (Protected Designation of Origin and Protected Geographical Indication) and more than hundreds of niche quality local foods (Galluzzo, 2013; Henke & Salvioni, 2010). According to the Italian Minister of Agriculture and the European Union, on a total amount of 293 protected foodstuffs PDO and PGI produced in Italy 20 comes from Sicily and 14 from Sardinia.

Furthermore, in Italy and in other European countries the diversification of farm's activities by the agritourism and rural tourism has improved the level of farmer's income reducing the emigration from the countryside which has been more intense in the past fifty years as a consequence of farmer's income shrinking (Galluzzo, 2016; 2015; 2010; Van der Ploeg and Roep, 2003; Van der Ploeg et al., 2002).

The main bottleneck of Italian farms is correlated to their own agricultural areas which is under the average value assessed in all states part of the European Union equal to 12.6 hectares. In Italy, the average value of farms is under 8 hectares and this has directly had negative impacts on the socio-economic features of the rural areas (Galluzzo, 2013). Recent statistical data published in the National Agricultural Census in 2010 pointed out as Italian farms had an average usable agricultural area lower than 8 hectares and in Sardinia and in Sicily the average value was above 9 hectares (Istat,

2015). According to the European Statistical Institute of the European Commission or Eurostat, in Italy the average utilised agricultural area per holding is increased by 52% moving from 7.9 hectares surveyed in 2010 to 12.0 hectares assessed in 2013.

The ownership of Italian family farms belongs predominantly to smallholder farmers even if this tiny enterprise, mostly fragmented in several modest plots of land, are managed and owned by an unique farmer and its family members work with him in the management of farms (Galluzzo, 2015). In Sicily since the early 1950s, small family farms have contrasted the hegemony of the latifundium; in fact, at that time, the Italian agrarian reform proposed by the Italian Parliament supported an equal redistribution of the ownership of lands through a process of forced expropriation towards large landowners, leading to a sharply growth of small family farms.

Since the early 1960s, the European Union has arranged an annual survey aimed at assessing the impact of the Common Agricultural Policy (CAP) on the farmer's income investigating also the specific economic and managerial issues in a sample of European farms (European Union, 2017; Galluzzo, 2016). This latter annual survey has been established by the Council Regulation number 79/65/EEC and it is called Farm Accountancy Data Network (FADN).

In literature, lots of studies have assessed in many European nations such as Italy, France, Slovenia, Hungary, Poland and in other new member states, belonging to the European Union since 2004 and from 2007, in a sample of farms or in agrarian enterprises part of the FADN dataset, technical and allocative efficiency investigating in depth the role of crop specialization, organic system of production, typology of ownership and dimension of farm on the efficiency (Galluzzo, 2017a; 2017b; 2014a; 2014b; 2013; Latruffe et al., 2004; Gorton & Davidova, 2004; Latruffe & Nauges,2014; Bojnec & Latruffe; 2008; 2009; Latruffe et al., 2008; Latruffe et al., 2012). Several studies have also estimated the correlation between the variable efficiency and productivity (Papadas, 1991). Findings have pointed out as there is a nexus between farm size, typology of ownership and efficiency as investigated and argued in Italy where small family farms are typical of the agrarian productive fabric (Galluzzo, 2013; 2014b; 2015; 2016).

In Italy, some studies have also emphasized by a quantitative approach the technical and economic efficiency using the FADN dataset, comparing organic and conventional systems of farming (Cislino & Madau, 2007), crop specialization and efficiency (Madau, 2007). In other studies, FADN dataset has been used with the purpose to assess the cost of production in dairy farms, comparing also the technical efficiency in function of altimetry of farms in two different but neighbouring European countries such as Italy and France (Cesaro et al., 2010; Marongiu et al., 2010).

Focusing the attention only to the technical efficiency assessed on the FADN dataset in some farms specialized in arboreous cultivations located in the south of Italy, in Sardinia and in Sicily, findings have pointed out as farms size, fragmentation in plots of land capital, age of farmers and location of farms have influenced the level of efficiency (Madau, 2010).

2. Aim of the paper

The purpose of this research was to assess by a quantitative approach technical and economic efficiency in some Italian farms belonging to the Farm Accountancy Data Network dataset since 2004 to 2014 and located in two insular regions such as Sicily

and Sardinia. The quantitative approach has used a non-parametric model or Data Envelopment Analysis (DEA) aimed at estimating the efficiency in farms.

The main question has been to investigate how is changed over the time 2004-2014 the technical and economic efficiency in farms belonging to the FADN dataset, describing also some different characteristics and issues in these two islands following the methodology and the aims of the research previously proposed by other Italian and European authors (Cisilino & Madau, 2007; Cesaro et al., 2010; Marongiu et al., 2010; Latruffe et al., 2004; 2012; Bojnec & Latruffe, 2008; Galluzzo, 2013; 2016).

3. Methodology

In an economic and technical approach, the efficiency can be study following two different quantitative methods: a parametric approach, which needs of a specific function of production such as Cobb-Douglas function and other well defined parametric variables, and a non-parametric model defined as Data Envelopment Analysis (Coelli et al., 2005; Bielik & Rajcaniova 2004; Farrel, 1957; Coelli, 1992; Charnes et al., 1978; Maietta, 2007). According to these authors, the aim of a non-parametric model is to build an hypothetical function of production; hence, the distance from the frontier of this function is a good approximation to estimate an index of technical inefficiency.

Whether the farm is efficient its position is along the hypothetical function which represents the optimal combination of used input and produced output able to maximise the function of production. The maximization of the technical efficiency emphasizes the target of farmers in maximizing the output minimizing the inputs or vice versa (Bojnec & Latruffe, 2008).

In this research, technical and economic efficiency has been estimated by a non-parametric model applied to specific assumptions in terms of the variable return to scale (VRS) and constant return to scale (CRS) in an input oriented model (Farrel, 1957; Battese, 1992; Coelli, 1996) using the software DEAP 2.1 .

The goal of the DEA linear programming model is to minimize in a multiple-output model the multiple input in each investigated farm belonging to the FADN dataset which in a mathematical model can be written (Farrel, 1957; Battese, 1992; Coelli 1996; Papadas, 1991; Galluzzo, 2016; Maietta, 2007):

$$\max h = \Sigma ruryrjo/\Sigma ivixijo \quad (1)$$

s.t.

$$\Sigma ruryrj/\Sigma ivixij \leq 1$$

$$j = 0, 1, ..., n \text{ (for all j)}$$

$$ur, vi \geq 0$$

ur = the output price vector

yrjo = the output level

vi = the input price vector

xijo = the input level

The non-parametric linear model with the Data Envelopment Analysis has been introduced for the first time in 1978 (Charnes et al., 1978); it is useful to estimate the relative efficiency in each unit of investigation called Decision Making Unit (DMU) based on a different level of input and output minimizing the level of used input (Doyle & Green 1994; Hadad et al., 2007). In term of productivity, if there are two DMUs, or rather two enterprises, such as A and B able to produce two levels of output such as ya or yb using a specific quantity of input xa and xb, the function of productivity is a simple ratio between used input and output which implies a ratio written as ya/xa and yb/xb.

The purpose of a non-parametric input oriented model in a DEA linear programming methodology is to minimize in a multiple-output model the multiple-input in each farm that is the ratio of efficiency. The bottleneck of this approach is due to different possible solutions. In fact, a non-parametric model has many possible solutions and ur* and vi* and lots of possible input-output combinations. The value of efficiency should be at least greater than 0 or than another small but positive quantity and lower 1 or 100% which is the optimal threshold (Papadas 1991; Bhagavath 2006).

Assuming the word h as a symbol describing the efficiency, if h is equal to 1 or 100% in a Decision-Making Unit, there are no problems about the assessment of efficiency because this unit (DMUh1) is more efficient compared to other DMUhn, but if h is above 1 or 100%, there are many units more efficient than this unique and inefficient unit (DMUh1). Every Decision-Making Unit is tightly linked to a specific combination of different levels of input and output which imply as each unit could be efficient or not efficient (Bhagavath 2006).

To solve this negative aspect mentioned before, it is fundamental to transform the model into a linear function by a linear programming methodology called the CCR approach (Charnes & Cooper 1962; Charnes et al., 1978). According to these authors, the above-mentioned relationships can be transformed in a linear programming model, fixing in each Decision-Making Unit (DMUhn) some constraints able to minimize the input in the case of an input oriented model or maximizing the produced output in an output model oriented approach (Burja, 2011; Galluzzo, 2013; 2016; Farrel 1957; Battese 1992; Coelli 1996; Bojnec & Latruffe, 2008; Maietta, 2007) written as:

$$\max \sum_{j=1}^{m} vjyhn \qquad (2)$$

s.t.

$$\max \sum_{j=1}^{m} vjyhn$$

$$\sum_{j=1}^{m} vjyhj - \sum_{i=1}^{n} uixhi \leq 0$$

$$\forall uj, vj \geq 0$$

4. Results and discussion

Analysing the main characteristics of in farms part of the FADN dataset over the time of investigation, findings of Usable Agricultural Areas (UAA) in Sicily and in Sardinia have pointed out a sharply and constant decrease in Sicily (Fig. 1). In this island, since 2007, the amount of UAA has been below 15 hectares (Fig. 1). However, this value has been above the Italian average amount investigated by Eurostat and close to 13 hectares. In Sardinia, with the exception in two-year time 2010-2011, the UAA, predominately cultivated with forage crops, was three times higher than the value assessed in Sicily.

Table 1 describes and compares in Sicily and Sardinia the different values of output, financial subsidies allocated by the Common Agricultural Policy in favour of disadvantaged rural areas and the level of farm net income. Outcomes have pointed out as in Sicily the level of output on input is higher than the national average value with the poorest value assessed in 2005.

Sardinian farms part of Farm Accountancy Data Network has had the highest level of farm net income; in two-year time 2005-2006 only there were the poorest values of income. Findings have highlighted some negative impacts of the new strategy puts into effect by the European Union in the Common Agricultural Policy 2014-2020. In fact, a complete process of reform in the European Union structural funds has implied a significant shrinking of direct payments disbursed towards disadvantaged rural areas (LFA). Assuming the Constant Return to Scale (CRS model), Sicilian farms have been technical efficient in four years out of eleven; in particular in the last year of investigation (2014) there has been an increase of technical efficiency of farms part of the FADN dataset (Tab. 2). The decrease return to scale on the Variable Return to Scale (VRS) frontier in the DEA model has been assesses in 4 years out of 11; in 2012 and in 2013 outcomes have highlighted a decreasing return to scale. In average value over 11 years of investigation Sicilian farms have not been efficient as the value has been lower the threshold of 1.

In Sardinia, the analysis of efficiency has pointed out a complete different situation compared to Sicily even if, in average value the technical efficiency in Sardinian farms part of the FADN dataset has been better than Sicilian farms with a value under the threshold equal to 1 (Tab. 3). Findings of technical efficiency in Sardinia have been higher than those values of technical efficiency assessed in the FADN sample of Sicilian farms (Tab. 3). The increase return to scale on the VRS frontier applied in the DEA model has highlighted in 4 years out of 11 such as 2004, 2006, 2007, 2012 a decrease returns to scale on the frontier VRS. Comparing the average values of technical efficiency in Sicily, Sardinia and Italy, outcomes have pointed out as Sardinian farms have had the same level of technical efficiency pointed out at a national level and equal in terms of CRS, VRS and scale efficiency to 0.974, 0.993 and 0.981; hence, Sicilian farms have had the poorest results compared both to the Sardinian outcomes and also to the Italian findings.

Summing up, findings in Sardinia have pointed out the higher level of technical efficiency. Furthermore, outcomes have strengthened the existence of a nexus between the highest level of produced output and and financial subsidies allocated by the CAP due to a larger amount of usable agricultural areas. However, outcomes at this stage of research did not emphasize if there is a correlation among crop specialization and level of efficiency as argued by other authors (Galluzzo 2017a; 2017b; Latruffe et al., 2012; Madau, 2006).

Comparing the average values of scale efficiency in Sardinia and in Sicily, findings have highlighted as Sicilian farms have had the best results than the Sardinian ones; hence, an increase of size in the agrarian enterprises, such as usable agricultural areas or in other inputs, implies an increase in farm's efficiency. However, addressing the attention on the results of scale efficiency over the time of investigation in Sardinian and Sicilian farms have produced under their optimal scale of production. The values slightly under the threshold of 1 emphasize as both Sicilian and Sardinian farms are very close to the optimal value of technical and economic efficiency and only several modifications in the endowment and distribution of inputs are able to make these farms near to their optimal scale of production.

5. Conclusions

Sardinian farms have been more technical efficient than the Sicilian one due to a different dimension of farms and also as a consequence of highest payments allocated by the European Union in the framework of the Common Agricultural Policy in favour of disadvantaged rural areas. Farms located in less favoured rural areas have corroborated their direct interdependence from LFA payments and the irreplaceable role of these financial supports towards farmers. In fact, findings have highlighted a direct sensitivity of efficiency afterwards a decline in the amount of financial supports disbursed by the European Union. As a consequence of the enlargement of the EU, a reduction of Less Favoured Areas payments has implied a shrinking in the technical efficiency both in Sardinian and Sicilian farms but also in Italian ones. For the future LFA supports are the most important strategic milestone in contrasting the socio-economic marginalization of rural areas and the emigration from the countryside.

The level of specialization of farm in terms of typology of crops is a fundamental variable in increasing the level of efficiency towards Sardinian agricultural enterprises which are mainly specialized in dairy production by sheep partially remunerated as cheese exported all over the world.

Comparing results of this research to others carried out in 2007-2011 in all European countries, both the average Italian value of technical efficiency and also findings of the scale efficiency have been higher of outcomes assessed by Nowak et al., 2015. In general, the value of technical efficiency in Sardinian and in Sicilian farms has been higher than the average value assessed in the 27 European countries by Nowak et al. in 2015 but it has been lower than the threshold of optimal efficiency equal to 1.

Findings have emphasized the fundamental role of agrarian capital in increasing in Sicilian farms the productivity and the technical efficiency. Significant and positive has been the role of financial subsidies allocated by the second pillar of the Common Agricultural Policy and by supporting financially less favoured rural areas, which need of direct payment aimed at reducing the socio-economic marginalization of rural territories. Summing up, the fragmentation of farms in modest plots of land is one of the most negative factor able to restrict the farmers' income and their level of productivity in both investigated Italian islands.

References

Bojnec, Š. & Latruffe, L. 2008. Measures of farm business efficiency. Industrial Management & Data Systems, vol. 108, no. 2, pp. 258-270.

Bojnec, Š., & Latruffe, L. 2009. Determinants of technical efficiency of Slovenian farms. Post-

Communist Economies, vol. 21, no. 1, pp. 117-124.

Burja, V. (2011). Regional disparities of agricultural performance in Romania. Annales Universitatis Apulensis: Series Oeconomica, vol. 13, no. 1, pp. 115-121.

Cisilino, F. & Madau, F.A. 2007. Organic and conventional farming: a comparison analysis through the Italian FADN. Paper presented to the I Mediterranean Conference of AgroFood Social Scientists and 103rd EAAE Seminar Adding Value to the Agro-Food Supply Chain in the Future Euro Mediterranean Space, Barcelona, Spain, April 23rd-25th 2007.

Coelli, T., Rao, P., O'Donnell, C. & Battese, E. 2005. An Introduction to Efficiency and Productivity Analysis 2nd ed., Springer, New York.

European Union. 2017. Farm Accountancy Data Network. Available from: http://ec.europa.eu/agriculture/rica/legalbasis_en.cfm [15 May 2017]

Galluzzo, N. 2010. Ruolo e funzione socio-economica dell'agricoltura italiana per la salvaguardia delle aree rurali, Aracne editrice, Roma.

Galluzzo, N. 2013. Farm dimension and efficiency in Italian agriculture: A quantitative approach. American Journal of Rural Development, vol. 1, no. 2, pp. 26-32.

Galluzzo, N. 2014a. Analysis of Efficiency in Organic Vine-Growing Farms Using Italian FADN Dataset. European Journal of Business, Economics and Accountancy, vol. 2, no. 2, pp. 73-83.

Galluzzo, N. 2014b. Comparing Technical and Economic Efficiency among Organic and Conventional Italian Olive Farms. International Journal of Agricultural Science, Research and Technology in Extension and Education Systems, vol. 4, no. 1, pp. 15-23.

Galluzzo, N. 2015. Technical and economic efficiency analysis on Italian smallholder family farms using Farm Accountancy Data Network dataset. Studies in Agricultural Economics, vol. 117, pp. 35-42

Galluzzo, N. 2016. An analysis of the efficiency in a sample of small Italian farms part of the FADN dataset. Agric.Econ- Czech, vol. 62, no. 2, pp. 62-70.

Galluzzo, N. 2017a. Analysis of some economic variables in Slovenian farms using FADN dataset. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, vol. 17, no. 1, pp. 215-221

Galluzzo, N. 2017b. Medium Term Analysis of Technical and Allocative Efficiency in Romanian Farms Using FADN Dataset. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Horticulture, vol. 74, no. 1, pp. 83-92.

Gorton, M., & Davidova, S. 2004. Farm productivity and efficiency in the CEE applicant countries: a synthesis of results. Agricultural economics, vol. 30, no. 1, pp.1-16.

Henke, R. & Salvioni, C. 2010. Diffusione, struttura e redditività delle aziende multifunzionali. Agriregionieuropa, vol. 6, no. 20, pp. 16-19.

Istat (Italian National Institute of Statistics). 2015. Annuario Statistico Italiano anno 2014. Available from: http://www.istat.it/it/files/2014/11/C13.pdf [10 May 2017]..

Latruffe L., Balcombe, K., Davidova S. & Zawalinska, K. 2004. Determinants of technical efficiency of crop and livestock farms in Poland. Applied Economics, vol. 36, pp. 1255-1263.

Latruffe, L., & Nauges, C. 2014. Technical efficiency and conversion to organic farming: the case of France. European Review of Agricultural Economics, vol. 41, no. 2, pp. 227-253.

Latruffe, L., Davidova, S., & Balcombe, K. 2008. Application of a double bootstrap to investigation of determinants of technical efficiency of farms in Central Europe. Journal of Productivity Analysis, vol. 29, no. 2, pp. 183-191.

Latruffe, L., Fogarasi, J., & Desjeux, Y. 2012. Efficiency, productivity and technology comparison for farms in Central and Western Europe: The case of field crop and dairy

farming in Hungary and France. Economic Systems, vol. 36, no. 2, pp. 264-278.

Madau, F.A. 2006. Technical efficiency in organic farming: evidence from Italian cereal farms. Agricultural Economics Review, vol. 8, no. 1, pp. 5-21.

Maietta, O.W. 2007. L'analisi dell'efficienza; tecniche di base ed estensioni recenti. ESI Edizioni Scientifiche Italiane, Napoli, IT.

Nowak, A., Kijek, T. and Domanska, K. 2015. Technical efficiency and its determinants in the European Union agriculture. Agricultural Economics, vol. 61, no. 6, pp. 275-283.

Van der Ploeg, J.D., Roep, D. 2003. Multifunctionality and rural development: the actual situation in Europe. In: J.D. Van der Ploeg, J.D. and D. Roep (Eds.), Multifunctional agriculture: a new paradigm for European agriculture and rural development (37-53). : Ashgate, Hampshire.

Van der Ploeg, J.D., Long, A., and Banks, J. (2002). Living countryside: rural development processes in Europe: the state of the art. Amsterdam, Elsevier EBI, NL.

Appendix

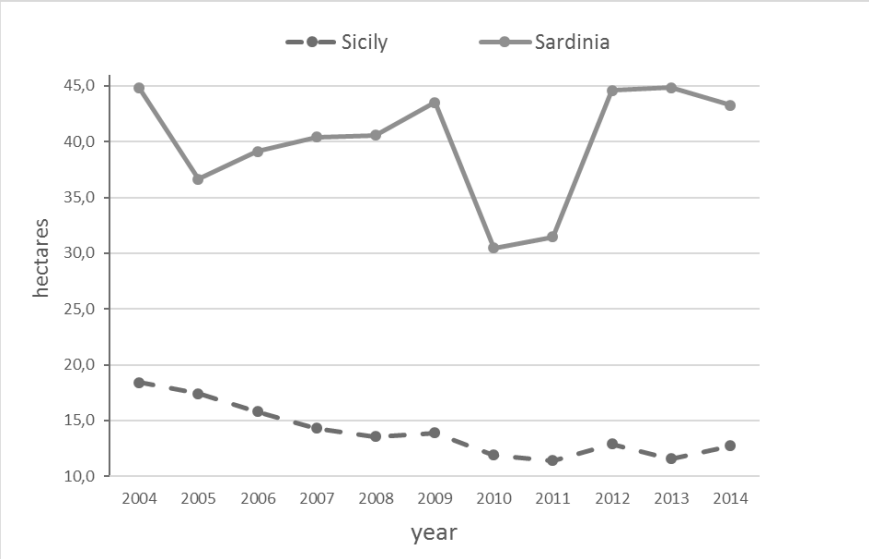

Fig. 1. *- Evolution of Usable Agricultural Area in two investigated Italian islands (Source: our elaboration on data http://ec.europa.eu/agriculture/rica/database/database_en.cfm)*

Tab. 1. *- Main economic results and financial support allocated by the European Union to farmers.*

year	Total output / Total input	Total crops output / ha	Specific crop costs / ha	Farm Net Income	LFA subsidies
Sicily					
2004	1.51	1,971.04	344.80	19,399.00	2,080.00
2005	1.50	1,994.11	327.22	17,315.00	923.00
2006	1.51	2,020.95	371.39	16,049.00	926.00
2007	1.53	2,437.16	532.56	16,753.00	718.00
2008	1.59	2,246.27	404.74	16,035.00	748.00
2009	1.79	2,380.97	354.62	19,475.00	532.00
2010	1.68	2,062.82	343.20	13,059.00	409.00
2011	1.79	2,552.97	384.13	16,227.00	482.00
2012	1.79	2,038.32	313.83	15,512.00	437.00
2013	1.76	2,075.05	363.43	14,926.00	387.00
2014	1.79	1,923.97	314.48	16,085.00	77.00
Average	1.65	2,154.87	368.58	16,439.54	701.77
Sardinia					
2004	1.60	451.15	79.94	24,426.00	3,146.00
2005	1.40	550.06	96.67	19,783.00	2,845.00
2006	1.34	535.84	93.79	19,717.00	3,147.00
2007	1.41	561.16	102.09	20,960.00	3,078.00
2008	1.49	519.09	80.77	21,721.00	2,841.00
2009	1.49	497.26	88.14	22,541.00	3,104.00
2010	1.65	824.19	119.15	21,443.00	1,743.00
2011	1.66	990.48	134.31	29,014.00	699.00
2012	1.44	550.32	110.34	28,007.00	2,831.00
2013	1.55	680.31	137.94	28,895.00	2,443.00
2014	1.52	557.23	110.68	25,423.00	378.00
Average	1.50	610.64	104.89	23,811.81	2,386.81
Italy					
2004	1.55	2,439.70	497.99	32,680.00	1,506,00
2005	1.42	2,417.70	493.91	22,900.00	1,122.00
2006	1.46	2,449.40	488.31	24,406.00	1,118.00
2007	1.48	2,431.20	464.37	22,719.00	851.00
2008	1.53	2,368.03	422.30	22,969.00	817.00
2009	1.52	2,296.40	428.87	22,870.00	918.00
2010	1.54	2,307.75	431.19	21,695.00	709.00
2011	1.59	2,530.19	445.94	24,948.00	667.00
2012	1.48	1,946.97	373.59	21,470.00	803.00
2013	1.46	1,972.08	388.62	20,900.00	858.00
2014	1.44	1,993.55	426.25	19,966.00	431.00
Average	1.49	2,286.63	441.94	23,411.18	890.90

Source: our elaboration on data http://ec.europa.eu/agriculture/rica/database/database_en.cfm

***Tab. 2.** - Main results of technical efficiency in Sicilian farms*

Year	Constant return to scale technical efficiency (CRSTE)	Variable return to scale technical efficiency (VRSTE)	Scale efficiency	Type of return to scale
2004	0.811	0.813	0.998	drs
2005	0.857	0.863	0.990	drs
2006	0.857	0.863	0.993	drs
2007	0.877	0.877	1.00	-
2008	0.959	1.00	0.959	drs
2009	1.00	1.00	1.00	-
2010	1.00	1.00	1.00	-
2011	1.00	1.00	1.00	-
2012	0.961	1.00	0.961	irs
2013	0.938	1.00	0.938	irs
2014	1.00	1.00	1.00	-
Mean	0.928	0.942	0.985	

drs stands for decreasing return to scale; irs stands for increasing return to scale
Source: our elaboration on data http://ec.europa.eu/agriculture/rica/database/database_en.cfm

***Tab. 3.** - Main results of technical efficiency in Sardinian farms*

Year	Constant return to scale technical efficiency (CRSTE)	Variable return to scale technical efficiency (VRSTE)	Scale efficiency	Type of return to scale
2004	0.947	1.00	0.947	irs
2005	1.00	1.00	1.00	-
2006	0.896	1.00	0.896	irs
2007	0.919	0.993	0.926	irs
2008	1.00	1.00	1.00	-
2009	1.00	1.00	1.00	-
2010	1.00	1.00	1.00	-
2011	1.00	1.00	1.00	-
2012	0.955	0.983	0.972	irs
2013	1.00	1.00	1.00	-
2014	1.00	1.00	1.00	-
Mean	0.974	0.998	0.976	

drs stands for decreasing return to scale; irs stands for increasing return to scale
Source: our elaboration on data http://ec.europa.eu/agriculture/rica/database/database_en.cfm