

Agricultural cooperatives and economic efficiency

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Jel classification: Q130

1. Introduction

Cooperative organizations involve more than simply competing in the market. Cooperatives as economic organizations can be community action instruments and community involvement instruments in order to combine the economic, social and political issues.

In our opinion, the most relevant contribution of cooperatives is an internal and external relationships model that is not based on shareholders' funds or production property rights. Their mechanisms of governance are structured under a democratic participation of the members in the decision making process.

Following Bellostas et al. (2002), cooperatives are "many-sided entities, with several remarkable elements, that is: (a) an alternative organization in which people unite to mutually meet their economic, social and cultural needs; (b) a company as it competes in an economy sector; (c) a way of community participation further to commercial issues; (d) a social network generator mechanism; (e) a population development instrument in different regions and sectors".

Thus, the International Cooperative Alliance summarizes the cooperative values as follows: mutual self-help, self-responsibility, democracy, equality, equity and solidarity. In the tradition of their founders, cooperative members believe in the ethical values of honesty, openness, social responsibility and caring for others.

In Spain, the Spanish Constitution Article 129.2 declares: "the public authorities will effectively promote the different types of firm participation and will foster, through an adequate legislation, the cooperative organizations".

We consider that the cooperative model plays at least two roles: one, as an organizational reference, and, two, as a socioeconomic actor. In both roles, cooperative model has a

Abstract

Cooperative organizations involve more than simple competition on the market. Cooperatives as economic organizations can be community action instruments and community involvement instruments in order to combine the economic, social and political issues. The aim of this paper is to analyze economic efficiency and propose a model of social evaluation of the agricultural cooperatives.

Résumé

Les coopératives sont des organisations qui n'impliquent pas simplement les phénomènes de compétition de marché. En tant qu'organisations économiques, les coopératives peuvent être des outils d'action des communautés capables de combiner les aspects économiques, sociaux et politiques. Le but de cet article est d'analyser l'efficacité économique et de proposer un modèle d'évaluation sociale des coopératives agricoles.

relevant function to be the essential structure of economy and society, performing as a development factor in rural regions.

In this study, we shall focus on the agricultural cooperatives as one of the region commitment agents and as economic organizations with a relevant role in the market. The economic literature has contributed to analyzing

agriculture cooperatives and we underline the papers of Chaddad and Cook, (2004), Chloupkova et al. (2003) and, for the Spanish case, Juliá and Alonso (1994), Baamonte, (2000), Juliá and Marí (2002), Mozas (2002), Rodríguez and Mozas (2003), and Gómez, (2004). Furthermore, there is an important development of theoretical and empirical research and experiences on social balance in social economy (Mangin, 2001, Spear). Specially, the CFCA (Confédération Française de la Coopération Agricole) from 1998 has developed the social balance for agricultural cooperatives (Chomel and Couturier, 2002).

We specially study a particular type of cooperatives: agricultural cooperatives in the Spanish regional government of Aragón. According to Bellostas et al. (2002) and Corbera and Marcuello (2001), in Aragón agricultural cooperatives are wealth and employment generators being able to keep traditions and local culture, thus articulating at the same time a voluntary association characterized by solidarity and a democratic membership control in the decision making process.

The aim of this paper is to analyze the economic efficiency and propose a model of social efficiency of the agricultural cooperatives. The relevance of this research can be underlined in three points. First, the territorial model of Aragón is the contrast between the big service sector-based capital (Zaragoza) and a vast rural country with a notable presence of cooperatives. Second, we propose specific economic efficiency indicators and a theoretical proposal of social efficiency indicator. And finally, it is worthy to note that in the last decade cooperative movement in general and

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particularly cooperative movement in Aragón have experienced deep changes related to the agricultural sector.

In order to achieve this objective a data set covering the period between 1996 and 2002 is employed. In a first step, we analyzed the meaning of social efficiency. Second, the most important magnitudes of the agricultural sector are analyzed. Thirdly, we evaluate cooperative economic contributions with efficiency and finally we proposed a model of evaluation of social efficiency.

The remainder of the paper is as follows. Section 2 describes several concerns about evaluation of agricultural cooperatives. Section 3 focuses the discussion on the role of agricultural cooperatives in Spain. Section 4 evaluates the economic efficiency of the agricultural cooperatives of the sample and proposes a set of specific ratios to measure their performance. Finally, Section 5 underlines a model of social efficiency evaluation of agricultural cooperatives.

2. About efficiency of agricultural cooperative

The multi-functional role of agriculture was also clearly defined in the Agricultural Council's declaration in the context of the Agenda 2000 discussions and made the following statement: "it must be capable of maintaining the countryside, conserving nature and making a key contribution to the vitality of rural life and must be able to respond to consumer concerns and demands regarding food quality and safety, environmental protection and the safeguarding of animal welfare."

That is, EU agricultural policy proposed an agricultural model in which commercial and non commercial factors are included: specific production systems and territorial occupation, both support social and cultural traditions that advance in the European integration project (Libro Blanco de la Agricultura y Desarrollo Rural 2001, p. 291).

In this sense, agricultural cooperatives are one of the actors that carry out the European agricultural policy. Furthermore, these cooperatives have to be economically efficient and could be relevant rural development agents. In addition the "white paper" of the Spanish government (2001) defines rural development basic principals that cooperatives could be assuming: participation, democratic decision process, subsidiarity, community compromise, integrated development, innovation, continuity, etc. Furthermore, Julia and Marí (2002) proposed that agriculture cooperatives in Spain could contribute to rural development because: 1) they are stable organizations in the local economy; 2) they have developed new support functions and new sustainable production methods; 3) they are protagonist of agro-industrial development and new local services; 4) finally, the cooperative sector could be an active actor in the definition of rural development policy.

In consequence, activity evaluation of agricultural cooperatives needs first to establish economic efficiency indicators similar to firms and second indicators to reflect the so-

cial contribution on rural development. Economic efficiency indicators allow us to compare with other economic organizations in the sector; however, these indicators must go with social efficiency indicators. Thus, a first question arises: what is social efficiency?

According to Moneva et al. (2002), any organization or institution is efficient in social terms, if it "builds up society". Associating and creating social networks is a positive and optimal value. Socialization and social integration are an essential condition. Social efficiency in the cooperatives is shaped by their participation in society and inside them. If a cooperative offers results to "others" and besides itself, then we can speak of social efficiency improvement. So we must show which are the issues and outputs of cooperatives. But also, we need to distinguish what kind of internal life is developed by them. We can not accept any output; the validity of these results depends on their procedures and use of resources. Any social institution opening communication ways improves society, being it more efficient in social terms. Communication ways must be symmetric and they have two levels: (a) related to the social context; (b) related to the internal members of the organization. Control should be special in the case of cooperatives which manage government subsidies. This supervision has to control the internal mechanisms of taking decisions and the social presence and power of cooperative. Furthermore, we have to consider indicators of transparency and plurality.

In this way, the notion of social efficiency appears as a reference to society and the benefits of the organization/cooperative to its social context. But every epoch and time stresses different elements, so we need to distinguish goals and ends of each organization and the interests of society. However, we are living in a society where asymmetries increase, where social integration is more complex and difficult. The organization/cooperative will be more socially efficient when it collaborates to solve these "gaps" in the social system. We will value their resources when we compare institutions. When we make this comparison, we should speak about expenses, costs and, especially, of process and participation.

This open idea of cooperatives can be completed with the objectives that agricultural cooperatives have to assume according to COPA and COGECA (1999):

a) production: to provide consumers with secure and stable supplies of healthy, quality food & non-food products and to develop its competitive position on the world market based on sustainable production methods;

b) territorial: to safeguard and enhance the countryside and to provide environmental services valued by the public at large; to underpin the infrastructure, the economy and employment in a vast number of villages throughout the European Union and to prevent depopulation and desertification in more remote and difficult areas;

c) social: to contribute to reinforcing the economic and social cohesion between groups and regions - reducing dis-

Table 1. *European Agricultural Cooperatives 1998 -1999*

	Global Turnover ME	Nº Coops	Member Mill	GT./ coop	member/ coop	GT./ member
Belgium	3	300	50	10.00	166.67	60,000.00
Denmark	11.65	18	95.2	647.22	5,288.89	122,373.95
Finland	3.7	68	110	54.41	1,617.65	33,636.36
France	64	3,700	1,100	17.30	297.30	58,181.82
Germany	38.28	4,221	2,957	9.07	700.54	12,945.55
Greece	0.1	6,330	738	0.02	116.59	149.05
Ireland	11.3	122	185	92.62	1516.39	61,081.08
Italy	16.96	6,486	898	2.61	138.45	18,886.41
Netherlands	22.74	115	256	197.74	2,226.09	88,828.13
Portugal	0.87	1,072	588	0.81	548.51	1,479.59
Spain	12	3,926	977	3.06	248.85	12,282.50
Sweden	10	53	300	188.68	5,660.38	33,333.33
United Kingdom	12.38	565	241	21.90	427.00	51,369.30
EU	206.99	26,976	8,495.2	7.67	314.92	24,365.52

Source: COPA, COCEGA, 1998 -1999. <http://www.cogeca.be/>

parities between the richer and poorer regions of the EU.

3. Agricultural cooperatives in Spain

According to COPA COGECA in 1998/1999¹ the agricultural cooperatives represent in the European Union about 30,000 cooperative enterprises, almost 9 million members, over 600,000 employees, about 210 billion EURO turnover, over 50% of agricultural inputs supply and over 60% of the collection, processing and marketing of agricultural products.

In Table 1 and Figure 1 it can be observed that France, Germany and the Netherlands represent the highest values of global turnover, 64, 38.28 and 22.74, respectively. Spain has a medium value around 12 million euros. The total number of cooperatives is 26,976 and Italy, Greece, Germany and Spain have the highest number, 6,486, 6,330, 4,221 and 3,926, respectively. The number of memberships is about 9 millions and Germany, France and Spain concentrate more than 4 millions. However, Denmark, the Netherlands and Sweden have the highest values of global turnover by co-operative and the number of members by cooperative. Finally, focusing on the relationship between global turnover per member of cooperative, Denmark, the Netherlands and Ireland have the best ratio: 122,373.95, 88,828.13 and 61,081.08, respectively.

In this context, Spain presents an important number of agricultural cooperatives and memberships but with low value of membership per cooperative (248.85) and the lowest values of global turnover per cooperative and per membership.

Table 2 reports the main data of agricultural cooperatives per region in Spain. Our study focuses on the Spanish region of Aragón. This region has similar values to the medium cooperatives, the global turnover per cooperative is 261.37, the ratio of global turnover per member is 11,155.94 and the

global turnover per cooperative is 2.92. However, we can observe that memberships per cooperative are higher than the mean (43.84). Furthermore Aragón shares with internal regions multiple characteristics: low ratios of population per kilometre, low population villages and old population. The total population in Aragón is 1,217,514 inhabitants, with 47,700 km², 25.5 people per squared kilometre and 16% of the population is over 65 years. The total number of agricultural cooperatives in Spain in 2001 is 3,926 and Aragón represents a rough 5%. Global Turnover is 12,013 million euros and 4.9 % correspond to Aragón. Total memberships are 977,916 Aragón being 5.4%.

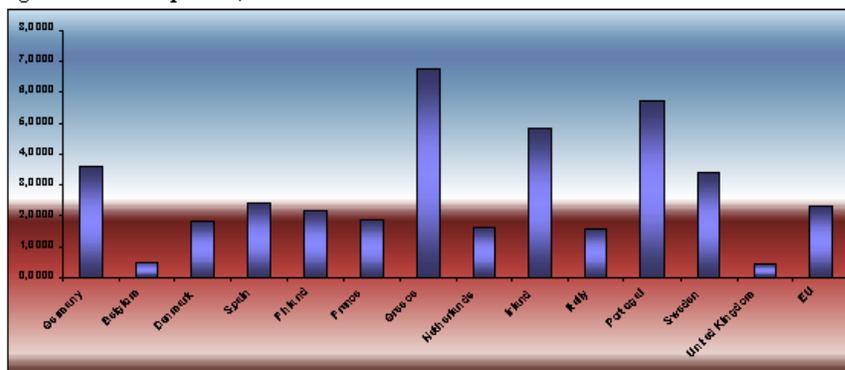
According to Confederación de Cooperativas Agrarias in Spain, the presence of cooperatives per productive sector indicates at least that agricultural cooperatives represent 30% of the sector and in the case of wine, olive oil 70% and in tobacco 100%.

4. Economic efficiency of agricultural cooperatives

Firm performance evaluation has been one of the most recurrent research topics among the Theory of the Firm². Thus, during the last decades empirical as well as theoretical contributions have developed a valuable set of tools and indicators in order to measure and test managers' performance.

Using this framework provided by the Theory of the Firm literature, the aim of this section is to apply several classic efficiency indexes and other ones more recently developed, such as EVA, to the economic behaviour of the agricultural cooperatives in the Spanish region of Aragón. Furthermore, once the most relevant results are obtained, a ratio decomposition index fitted to the idiosyncratic profile of the cooperatives will be modelled and tested.

In order to pursue this aim, an unbalanced panel data set covering the 1996-2002 period has been employed. Information contained in this data set has been carefully gathered from the SABI data base and the number of yearly observations varies between 41 and 104. SABI data base provides general economic activity information related to cooperatives (sales, capital, assets, expenses, taxes, etc) with

Figure 1. *Members per 100,000 inhabitants*

¹ http://www.cogeca.be/en/cogeca_objectifs.asp

² See for example Hay and Morris (1991), Markides (1995), Hitt et al. (1997), Qian (2002).

Table 2. *Agricultural Cooperatives* in Spain: number, global turnover and membership, 2001*

REGION	Number	%	Turnover		Members	
			Mill. €	%		%
ANDALUCIA	786	20	2,625	21.85	240,630	24.61
ARAGÓN	202	5	589	4.90	52,797	5.40
ASTURIAS	85	2	469	3.90	14,730	1.51
BALEARES	46	1	58	0.49	5,732	0.59
CANARIAS	46	1	123	1.02	11,930	1.22
CANTABRIA	26	1	58	0.48	7,745	0.79
CASTILLA-LA MANCHA	449	11	980	8.16	126,490	12.93
CASTILLA-LEON	350	9	1,262	10.51	70,520	7.21
CATALUÑA	430	11	1,287	10.71	53,908	5.51
C. ALENCIANA	561	14	1,360	11.32	220,810	22.60
EXTREMADURA	298	8	548	4.56	49,215	5.03
GALICIA	198	5	1,148	9.56	48,408	4.95
LA RIOJA	45	1	135	1.12	7,250	0.74
MADRID	36	1	82	0.68	8,745	0.89
MURCIA	98	2	547	4.55	23,175	2.37
NAVARRA	191	5	544	4.53	23,816	2.44
PAÍS VASCO	79	2	198	1.65	12,015	1.23
TOTAL	3,926	100	12,013	100.00	977,916	100.00

*This table includes SAT and cooperatives. Source: Libro Blanco de la Agricultura y el Desarrollo Rural, Spanish Ministry of Agriculture (2002).

Table 2. (continued)

REGION	Member/ 10.000pob	member/ coop	GT/ member	GT/ coop(ME)
ANDALUCIA	32.71	306.15	10,908.86	3.34
ARAGÓN	43.84	261.37	11,155.94	2.92
ASTURIAS	13.86	173.29	31,839.78	5.52
BALEARES	6.81	124.61	10,118.63	1.26
CANARIAS	7.04	259.35	10,310.14	2.67
CANTABRIA	14.47	297.88	7,488.70	2.23
CASTILLA-LA MANCHA	71.85	281.71	7,747.65	2.18
CASTILLA-LEON	28.71	201.49	17,895.63	3.61
CATALUÑA	8.50	125.37	23,874.01	2.99
C. ALENCIANA	53.04	393.60	6,159.14	2.42
EXTREMADURA	46.49	165.15	11,134.82	1.84
GALICIA	17.96	244.48	23,715.09	5.80
LA RIOJA	26.20	161.11	18,620.69	3.00
MADRID	1.61	242.92	9,376.79	2.28
MURCIA	19.35	236.48	23,603.02	5.58
NAVARRA	42.85	124.69	22,841.79	2.85
PAÍS VASCO	5.77	152.09	16,479.40	2.51
TOTAL	23.94	249.09	12,284.29	3.06

a low detail level. Particularly neither the value of the cooperative return nor the agricultural grants from the European Union are available.

The efficiency measures employed in this analysis are: Net Operative Profit/Loss After Taxes (NOPLAT), Net Profit (NP), Economic Value Added³ (EVA), Financial Profitability (FP) and Economic Profitability (EP), distinguishing in the last one between margin (M) and the sales to assets ratio (R). Measures definitions are as follows:

³ Proponents of EVA, most notably Stewart Stern & Company, are careful to adjust the balance sheet before arriving at an estimate of the value of the firm's assets in place (Bacidore et al., 1997). In this paper it has been calculated the weighted cost of capital valuating the capital at the legal interest rate. On the other hand non-interest-bearing current liabilities have been netted against current assets to better represent the permanent capital structure of the cooperative.

⁴ Median values eliminate the negative effects of extreme values in the distribution.

⁵ It is not a surprising result for the agricultural sector.

NOPLBT = Net operating revenues - Operating expenses

NOPLAT = Net operating revenue - Operating expenses - Taxation = NOPLBT - Taxation

NP = NOPLAT - Financial income (loss) - Extraordinary income (loss)

EVA = NOPLAT - Weighted cost of capital*Assets

FP = BN/Capital

EP = NOPLBT/Assets =

NOPLBT/Sales*Sales/Assets

M = NOPLBT/Sales

R = Sales/Assets

Table 3 shows the median values⁴ for the efficiency measures calculated as well as other income statement variables of interest (total sales and indebtedment).

Efficiency results obtained from the agricultural cooperatives of the Spanish region of Aragón show near to zero economic profitability figures⁵. Also and according to the results,

EVA behaviour is a more conservative efficiency measure than other classic measures such as net profit (Figure 2). Net profit is moderately overestimated compared to EVA.

As shown in Table 3 and Figure 2, the time trend of the results yields an efficiency decrease among the agricultural cooperatives of the Spanish region of Aragón. Behind this negative efficiency evolution in the agricultural cooperatives of the Spanish region of Aragón may be the Common Agricultural Policy (CAP) grants from the European Union (see Table 4).

According to this hypothesis, the agricultural cooperatives of the sample could be dependent on the European funds to continue their economic activity. Decreasing CAP grants in future periods might cause the exit of less efficient cooperatives due to scale or to managerial reasons. The former may imply the loss of the social and unifying functions previously identified in this kind of non-profit organizations. This problem will be especially severe in agriculture-dependent small towns and communities.

To conclude this section, a set of indexes specifically tai-

Figure 2. EVA vs. Net Profit (median values).

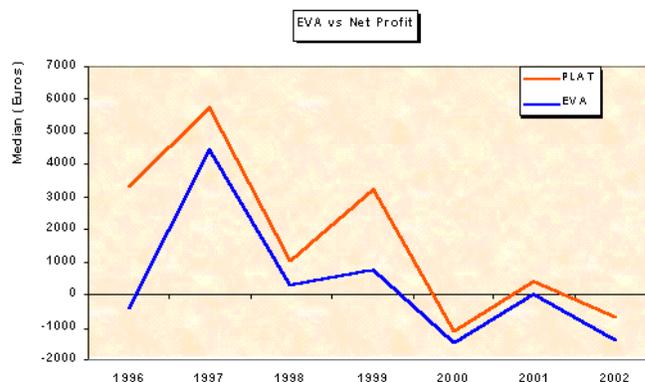


Table 3. *Economic efficiency of the agricultural cooperatives in Aragón.*

Variable	1996		1997		1998		1999	
	Obs.	Median	Obs.	Median	Obs.	Median	Obs.	Median
NOPLAT	53	8,303	59	13,661	64	4,869	60	7,834
Net profit	54	3,303	60	5,733	64	1,030	60	3,216
EVA	50	-428.29	57	4,441.00	63	266.55	50	755.09
Accumulated EVA	50	2,100,102	57	2,162,807	63	222,278	50	1,676,770
Financial profit.	53	4.05%	59	5.26%	64	2.29%	60	6.02%
Economic profit.	53	3.88%	59	10.91%	64	2.31%	60	5.19%
Margin	51	1.75%	58	6.03%	63	1.17%	60	0.97%
Sales to assets	51	1.78	58	1.95	63	1.77	60	1.60
Total Sales	51	46,124,280	58	64,837,164	63	79,490,712	60	73,232,720
Debtness	41	63.17%	49	61.57%	49	64.11%	51	66.69%

Table 3. *Economic efficiency of the agricultural cooperatives in Aragón (cont.).*

Variable	2000		2001		2002	
	Obs.	Median	Obs.	Median	Obs.	Median
NOPLAT	56	1,758	104	4,488	101	2,289
Net profit	56	-1,127	102	408	99	-699
EVA	55	-1,450.81	99	33.30	94	-1,398.70
Accumulated EVA	55	970,272	99	1,538,202	94	1,241,353
Financial profit.	56	3.47%	102	3.25%	99	2.11%
Economic profit.	56	1.43%	102	5.14%	98	1.86%
Margin	56	0.73%	99	2.36%	94	1.42%
Sales to assets	56	1.40	99	1.24	93	1.31
Total Sales	56	58,785,456	99	75,076,736	94	67,846,152
Debtness	50	67.71%	82	63.52%	79	65.91%

Table 4. *Macroeconomic measures of the agricultural sector in Aragón. (Current Million Euros)*

	1996	1997	1998	1999	2000
A.- AGRARIAN OUTPUT	2,400.10	2,633.68	2,533.24	2,436.10	2,735.23
B.- INTERMEDIATE CONSUMPTION	1,065.43	1,185.06	1,094.64	1,175.43	1,405.16
C=(A-B) GROSS VALUE ADDED	1,334.66	1,448.63	1,438.60	1,260.66	1,330.06
D.- DEPRECIATION	207.59	177.40	182.78	178.19	305.28
E.- GRANTS	67.94	56.70	60.28	63.46	76.81
F.- OTHER TAXES	8.32	2.50	6.08	5.63	7.80
G = (C-D+E-F) AGRICULTURE INCOME	1,186.70	1,325.44	1,310.02	1,140.31	1,093.79

Source: Macroeconomic measures evolution in the agrarian regions. (Evolución de las Macromagnitudes Agrarias Regionales), Spanish Ministry of Agriculture (1990-2000).

lored to the agricultural cooperatives analysis is proposed. Beginning with a classic measure of efficiency (economic profitability) the decomposition of several unique individual mean ratios has been developed. This set of indexes would be a useful tool for agricultural cooperatives' managers in order to improve their economic efficiency. Analytically, this set of indicators is as follows:

$$EP = \frac{NOPLBT}{ASSETS} = \frac{NOPLBT}{SALES} \times \frac{SALES}{ASSETS} = \frac{NOPLBT}{SALES} \times \frac{SALES}{CAPITAL} \times \frac{CAPITAL}{ASSETS} \quad (1)$$

$$\frac{NOPLBT}{SALES} \times \frac{SALES}{CAPITAL} \times \frac{CAPITAL}{ASSETS} = \frac{NOPLBT}{SALES} \times \frac{MEMBERS}{CAPITAL} \times \frac{CAPITAL}{ASSETS} \quad (2)$$

Firstly, set (1) shows the classic economic profitability ratio decomposition between margin (operating profit/loss before taxes divided by sales) and asset rotation (sales divided by assets). Afterwards it includes the capital multiplying and dividing, generating two new ratios: capital productivity (sales per assets) and capital intensity (capital per

assets).

Finally, in (2) the number of members has been included multiplying and dividing by the capital productivity ratio. The new numerator can be interpreted as the members' productivity (over sales) whereas the new denominator can be interpreted as the capital spread among members. The latter index has a special analysis interest because, following the above statements, the economic profitability of agricultural cooperatives may improve to decrease the capital concentration among mem-

bers. According to the current Spanish Law of Cooperatives (Law 27/1999), agricultural cooperatives shares must be equal among members apart from voluntary donations. Thus, in this case the Law encourages economic efficiency. A great capital concentration rate per one or a few members has a harmful effect on the efficiency measured by the economic profitability.

Unfortunately, the number of members for the agricultural cooperatives of the sample is not available. However, the data base obtained from SABI has been checked along with the 2002 voluntary register of members provided by the Federation of Agricultural Cooperatives of the Spanish region of Aragón (Federación Aragonesa de Cooperativas Agrícolas, FACA). This data allows identifying the number of members in only 17 cooperatives. Of course this low number of cooperatives makes it nearly impossible to perform a generalized analysis of the sector but a few examples can be pointed out.

Therefore, two examples of the ratio decomposition proposed in (2) are explained using the results of 4 cooperatives. Results are depicted in Table 5.

Cooperatives labelled as 58 and 18 represent the first example of capital dispersion negative effect. Particularly, cooperative number 58 shows a lower economic profitability compared to cooperative number 18 in spite of having a higher margin, capital intensity and members' productivity. Capital dispersion among members plays a critical role in this example. In fact, we can observe a 48:1 ratio between the capital dispersion of these two cooperatives. This is a very first evidence of this ratio utility.

The second example is similar to the previous one. Cooperative labelled with number 114 shows higher margin and members' productivity. In this case, the economic efficien-

Table 5. *Decomposition ratios examples (year 2002).*

Id	EP	NOPLBT/ SALES	CAPITAL/ ASSETS	SALES/ MEMBERS	CAPITAL/ MEMBERS
58	1.96%	1.35%	0.2813	44,578.80	8,654.60
18	2.20%	1.14%	0.1030	3,377.17	180.28
43	9.98%	2.37%	0.3608	1,752.97	150.25
114	7.65%	2.94%	0.0187	58,322.00	420.60

Table 6. *Indicators of cooperative's social efficiency.*

Economic indicators	I. Resources	List per category resources: human resources, technological, material, financial statement
	II. Results	Products, programs and activities developed
		Productivity indicators standards and cooperative: relationship between resources and results (proposed in previous section)
	III. Process	Production process: environmental impact, quality, quantity, and resources used
	IV. Clients/Beneficiaries	The cooperative has different types of clients and beneficiaries of the activities. They have distinguish between types of clients and types of beneficiaries and related to results
	V. Members/workers	They have distinguish between types of members and types of workers and related to results
	VI. Social networks	In this case they have to establish the type of external relationships that cooperative promotes: federation, platforms, networks.
Social indicators	VII. Stakeholders	List and describe the stakeholders around cooperative in a wide sense
	VIII. Internal participation	They know who is implied in the cooperative. Now we have to describe the decision-making model in the organization and the participation system of stakeholders.
	IX. Scope	Main objectives of cooperative and results. The question is if the activities affect "others" or if they are only led "into" organization.
	X. Communication	Communication process internal and external.
	XI. Plurality	To specify the treatment that occur to the internal dissension and the mechanisms of tolerance.
	XII. Permeability	This indicator describes the degree of opening to the social demands of the organization in study. One is to describe how, how much and when they become echo of the necessities, deficiencies, proposals and other initiatives.

cy difference is more pronounced than before, which is attributable to the better figures in intensity of capital for cooperative number 43. Again, this example constitutes an evidence of the relevance of capital dispersion among members when the justification of the agricultural cooperatives economic efficiency comes into play.

Results obtained in this section points out a higher necessity of the public sector grants. In this sense, in previous years European funds from the CAP program have sustained several economic inefficiencies. Agricultural cooperatives' managers can avail of a wide range of decomposition ratios to evaluate their economic behaviour. Particularly, managers should focus their efficiency analysis on capital dispersion among members.

5. Social efficiency evaluation of agricultural cooperatives

In this paper we try to evaluate the role of agricultural cooperatives in a European context. The economic evaluation shows that global results are decreasing. Nevertheless, in European policy documents, cooperative associations as COGECA proposed that agricultural cooperatives have a main role in rural development and in the European integration process. Therefore, it is necessary to introduce "other"

er" indicators that examine social efficiency of cooperatives. In this Section, we propose a group of indicators to measure social efficiency in these organizations.

According to social efficiency definition of section two, we proposed operative approaches to elaborate a list of indicators of social efficiency (Table 6).

Furthermore, we have to consider the public activities and actions of each cooperative, its typology, its periodicity and its willingness. The members of a cooperative have to answer these questions. Also it is very interesting to obtain the opinion about the others in the same sector of cooperatives. In this way it can be first obtained a self-image and second, an interpretation of the related people. This is a picture and measure of their social efficiency. Obviously, every measurement is a relative relation with a pattern of reference that can be taken as a unity. If this approach is considered as a notion of social efficiency, then a numerical value is not needed. We propose the previous indicators as a self-valuation where the most important issue is to start a reflection

process. Figures are a necessity of managers or financial institutions and also of mass media. They prefer to simplify the reality with a number rather than to understand the "gross descriptions" about a complex world like this.

A cooperative will present a good score of social efficiency if this cooperative answer is affirmative to the previous elements. So the social efficiency of a cooperative is directly proportional to its capacity to build up a better society, starting from parity with communication channels, social plurality and social integration.

6. Conclusions

It seems that there is a certain consensus about cooperatives as economic organizations that move towards a way of management and try to be socially desirable. In the case of agricultures cooperative, different European institutions confer to these organizations a relevant social, economic, and environmental role. As COGECA proposed, agricultural cooperatives have an important work to do: sustainable production methods that secure stable supplies of healthy quality food and non-food products in a competitive way; environmental responsibilities, strengthening economic areas and preventing depopulation; finally, they are an instrument to promote social cohesion.

However, social efficiency is a complex and relative concept. How to validate that an organization is social efficient? In this paper we proposed a model in which that cooperative is more socially efficient when it collaborates to solve the social problems in its social context. More concretely, we should speak about expenses, costs, and especially, of process and participation that occur into the organization. In the case of agriculture cooperatives, they need economic efficiency indicators to evaluate their market activities and indicators that reflect the social contribution to rural development.

In this paper we analyzed the economic results of agricultural cooperatives in Spain through traditional economic efficiency indicators in firms: Net Operative Profit/loss After Taxes (NOPLAT), and Economic Valued Added (EVA). The results obtained show that the time trend (1996-2002) of the results yields and efficiency decreases among the agricultural cooperatives in a sample in Spain. However, we proposed that traditional firm efficiency indicators are not sufficient to analyze agriculture cooperatives and we proposed and applied four indicators taking into account NPOLBT, sales, capital, members and assets of cooperative. One of them is focused on capital dispersion among members and we found evidence of the relevance of this ratio. We consider that agriculture cooperative managers could use these ratios to evaluate their economic behaviour.

Finally, we described theoretically two groups of indicators to measure social efficiency in agriculture cooperatives. We proposed two main groups: one where economic indicators are related to resources, results, process, clients/beneficiaries and member/workers of cooperative; and, the second with social indicators taking into account stakeholders, social networks generated by cooperative, internal participation, scope of activities, plurality, permeability and community programs. This is a possible theoretical approach, but we consider that social efficiency and economic efficiency evaluation of agriculture cooperative need to be discussed in the wide sense. European agriculture cooperative managers could use this idea for self-evaluation and politicians could require specific mechanisms to analyze this sector that presents special characteristics.

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