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Staff Paper

Alternative Italian Agricultural Cooperative Systems in the Changing EU Food System

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ALTERNATIVE ITALIAN AGRICULTURAL COOPERATIVE STRATEGIES IN THE CHANGING EU FOOD SYSTEM.

By Carlo Russo, Dave Weatherspoon and H. Christopher Peterson[1]

17 pages

1. Introduction.

The European food system is undergoing significant change driven both by global competitive forces and local conditions. Market globalization and technological innovation are interacting with the reform of EU's agricultural policies (CAP) and a renewed interest by the European society in the social and environmental functions of agriculture. These factors have created a new and challenging economic environment both for farmers and the food industry across Europe (Tarditi, 1997).

The Italian farm system is having difficulty in facing these changes because of the large number of remarkably small units of production. In 1997, the average tillable acreage of the 2.48 million Italian holdings was 14.57 acres versus 43 acres for the 7.37 million holdings in the entire EU and the 487 acres for the 1.91 million US farms (European Commission, 1998). Italy represents 33.7% of the EU holdings but only 10.9% of the total tillable area. In this context, Italian agricultural cooperatives, a traditional link

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between the producers and the market, are struggling to find new strategies to pursue their mission in a more demanding environment. This issue is critical for the Italian food system because of the importance of cooperatives as transaction agents in the market. A survey showed that, in 1994, 51.8% of Italian farmers used cooperatives to market at least part of their production (Malorgio, 1995). In particular, cooperatives marketed approximately 50% of Italian wine production, 34% of all cheese and 40% of all raw milk.

The objective of this paper is to describe the strategies that cooperatives are implementing and to provide insight into the possible new roles they can assume in the market. This objective will be realized by analyzing a new dataset containing financial and structural information on approximately 20% of all Italian agricultural cooperatives.[2] The database is one of the most extensive in Italy and it allows for deeper insight into cooperatives' strategies. The study is organized as follows: the sample data are presented through a comparison with the US cooperatives, then a more detailed financial analysis of Italian cooperatives is provided and, lastly, the information is used to describe the current trends in the Italian cooperatives. The data on Italian cooperatives are summarized in table 2.1 and other tables and figures are presented in the text to support the discussion.

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[2]The data on Italian cooperatives reported in tables and figures are courtesy of Confederazione Cooperative Italiane, the most representative Italian cooperative Association. The Authors are particularly thankful to Mr. Vincenzo Mannino and Mr. Luciano Quiriconi for their support.

Table 2.1: Descriptive Statistic of a Sample of 1691 Italian Agricultural Cooperatives

Sectors	N. Coop.	Concentration Ratio of Sample Revenues		Revenues			Total Assets	Workforce	Num. of Members
		5% largest coop.	4 largest coop.	% inciden. of total sample	avg. per coop. ($mil.)	avg. per member ($mil.)[3]	avg. per coop. ($mil.)	avg. per coop. (n.)	avg. per coop. (n.)
	A	B	C	D	E	F	G	H	I
Livestock	202	81.0%	57.2%	9.9%	3.79	0.07	2.11	16	58
Poultry	22	69.0%	83.7%	16.9%	59.43	3.92	15.30	202	22
Services and Farm Sup.	224	67.8%	43.0%	6.0%	2.06	0.04	1.13	3	123
Joint Farming	87	54.8%	54.8%	0.6%	0.51	0.02	0.82	7	31
Fruits and Vegetables	259	51.8%	32.4%	16.6%	4.98	0.06	4.62	22	177
Dairy	460	51.6%	22.6%	29.3%	4.93	0.14	4.10	9	57
Forestry	28	46.5%	66.3%	0.1%	0.20	0.01	0.23	8	52
Wine	241	37.8%	27.3%	15.0%	4.81	0.02	5.46	11	436
Olive Oil	109	37.3%	32.4%	1.0%	0.70	0.00	0.75	4	317
Tobacco	18	28.4%	69.5%	1.4%	6.04	0.09	5.13	29	693
Grain	38	22.4%	36.0%	1.8%	3.72	0.03	2.55	5	350
Sugar and Rice	3	N A	N A	1.5%	38.39	0.03	46.60	114	1039
Sample Totals/Averages	*1,691*	*62.2%*	*20.9%*	*100.0%*	*4.58*	0.12	*3.49*	*14*	*168*

[3] Eighty four federated cooperatives were excluded from the calculation of average revenues per member.

2. Background Data.

The 1691 cooperative sample included the financial statements and other structural data. The information refers to fiscal year 1996. Fifty-seven percent of the observations were located in the North, 20% in Central and 23% in South Italy. [4]

A sectoral decomposition of the sample is reported in Table 2.1 (column A). The sector breakdown includes some categories that are unique to Italy. Specifically, the services and the farm supply cooperatives are usually considered a single sector, which does not include credit or electric cooperatives. The joint farming sector is composed of cooperatives in which members jointly farm land and benefit from the profit from the sales of products. Lastly, forestry cooperatives are characterized by a specific eco-farming activity in rural area woodlands. These cooperatives usually receive the land in concession from local authorities. In order to provide a homogeneous comparison, the US cooperatives will be classified according to the Italian standards.

In 1996, the sample of 1,691 Italian cooperatives produced US$7,774 million of revenue using assets worth $5,900 million. [5] They employed more than 23,000 workers and had a total membership of 284,385 patrons. In the same fiscal year, 3,884 American cooperatives generated $128 billion of revenues, utilized $42 billion of assets and employed 174,795 workers. The total American membership was composed of 3,66 million patrons.[6]

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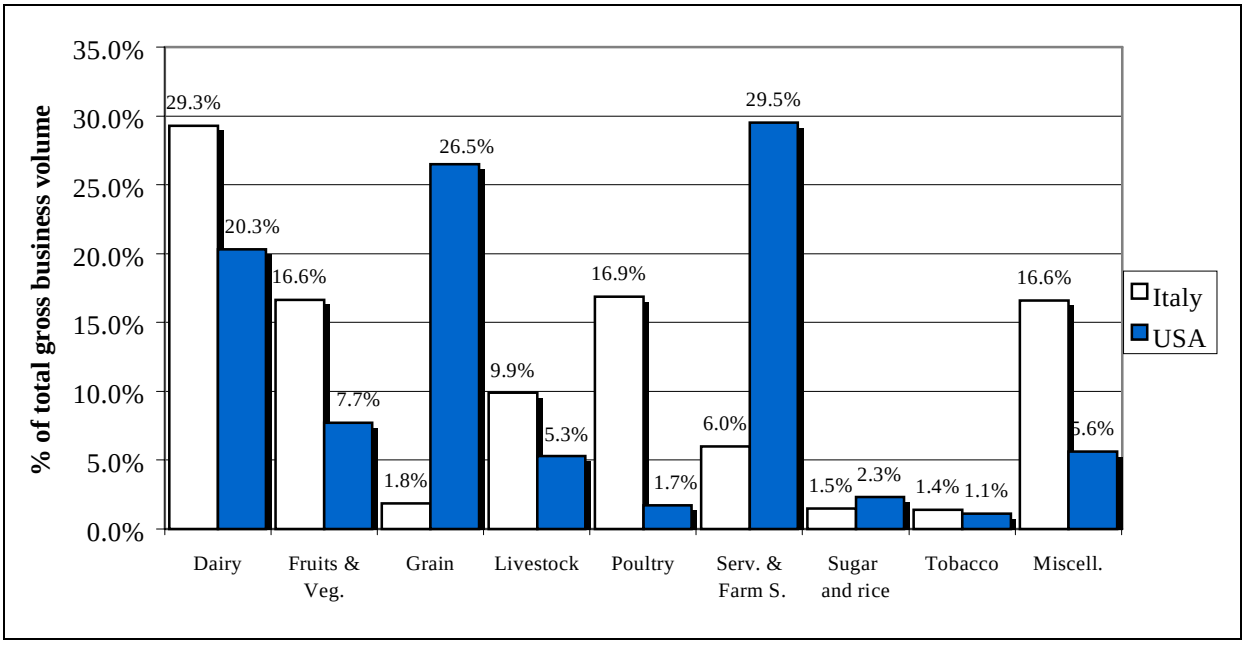
[4] This distribution reflects both the general conditions of the Italian economy and the morphology of the country. Most of Italian enterprises are located in the North, which also contains the most fertile farmland.
[5] In this paper a standard exchange rate 1$ for 1750 Lire is used.
[6] The source for all the data about US cooperatives was the USDA Farmer Cooperative Statistics, 1996.

In the US, the largest cooperative sector was services and farm supply: it was composed of 1,872 cooperatives (48.2% of total), had approximately 2 million members (54.1% of total) and produced 29.5% of the total revenues. Grain was the most traded commodity by US cooperatives: this sector involved 1,066 cooperatives (27,4% of total), 783,427 members and it produced $34 billion of revenues (26.5% of total). In Italy, dairy, fruit and vegetables and wine were the most representative sectors in terms of total revenues and number of cooperatives (Table 2.1). Figure 2.1 summarizes the differences in the two countries by comparing the percent incidence of the sectors on total revenues. The graph shows the higher incidence of grain and services and farm supply cooperatives in the US, and of poultry and fruit and vegetable cooperatives in Italy.[7] The difference in the composition reflects the characteristics of agriculture in the two countries; a commodity focus in the US versus a focus on the products characteristic of the Mediterranean area (wine, olive oil, fruits and dairy).

[7] The Italian miscellaneous group presented a 16.6% value due to the presence of wine cooperatives (15% of total revenues), not explicitly reported by USDA.

Figure 2.1: Percent of Total Revenues by Sector



The cooperatives of the two countries show remarkable differences in the scale of operation, as reported in table 2.2. The average size of the cooperatives in terms of revenues and number of members shows that the US cooperatives are, on average, larger than the Italian cooperatives. The only exception is the sugar and rice sector, where the average revenues are similar and the number of members is higher in Italy than in the US.

On average, revenue per member is approximately equal in the two countries ($0.03 million). The sector analysis showed relevant differences between the two countries. In dairy, fruit and vegetable, grain and sugar and rice sectors, the US cooperatives reported higher values. In the poultry, livestock and services and farm supplies sectors, the higher average revenue per member seems to imply that the scale of members' operations was larger in Italy than in US.

Table 2.2: Average Revenue per Cooperative, Number of Members and Revenue per Member for Italy and the US

	Revenue ($mil.)		N. of Members		Rev. per Memb. ($mil.)	
	Italy	USA	Italy	USA	Italy	USA
Dairy	4.93	96.77	57	470	0.09	0.21
Fruits and Vegetables	4.98	35.18	177	175	0.03	0.20
Grain	3.72	25.94	350	735	0.01	0.04
Livestock	3.79	75.56	58	3,133	0.07	0.02
Poultry	59.43	109.63	22	2,020	2.70	0.05
Services & Farm Supply	2.06	14.29	123	1,058	0.02	0.01
Sugar and Rice	38.39	41.66	1,039	392	0.04	0.11
Tobacco	6.04	54.31	693	10,257	0.01	0.01
Miscellaneous	4.81	27.66	309	561	0.02	0.05
Average	*4.58*	*27.34*	*168*	*943*	*0.03*	*0.03*

Table 2.3 reports the values of the equity/asset ratio and the total asset turnover by sector for the two countries. The total asset turnover was significantly higher in the US, especially in the livestock and dairy sectors, implying a possible lower efficiency of Italian cooperatives in managing their assets. Compared with the US, the Italian cooperatives were more leveraged on average. The average equity/asset ratio for Italian cooperatives was 0.2 showing that debt was the most common source for financing and confirming the importance of the undercapitalization problem in Italian cooperatives (Williams, 1996). The sector decomposition showed that dairy and poultry were the least capitalized sectors, while tobacco and sugar and rice presented higher index values. In the Italian sample, the total asset turnover ratio was significantly higher in poultry, while sugar and rice and services and farm supply had values below unity.

Table 2.3: Average Equity/Asset Ratio and Total Asset Turnover in Italy and the US

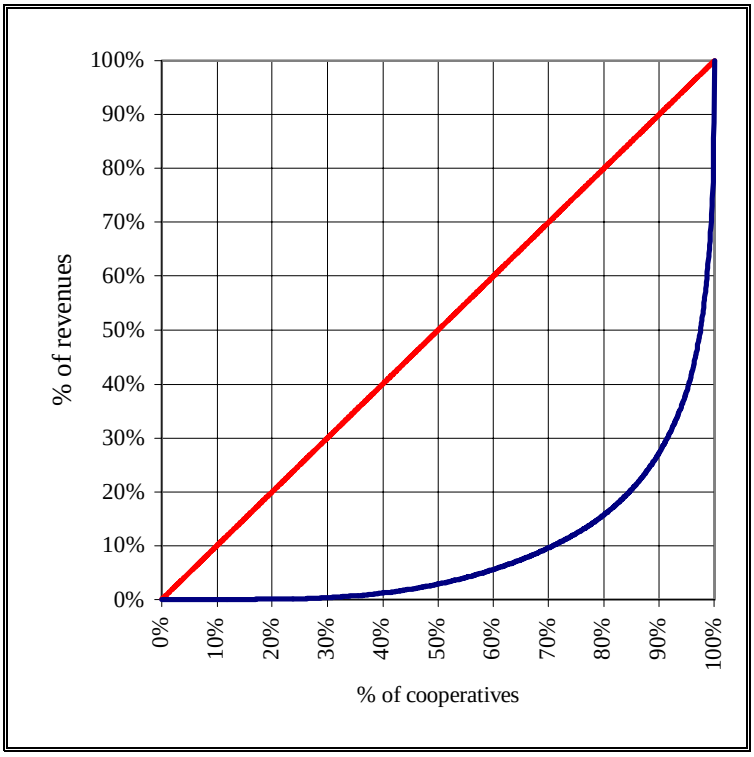
	Equity/Asset Ratio		Total Asset Turnover	
	Italy	USA	Italy	USA
Dairy	0.1	0.4	1.1	4.4
Fruits and Vegetables	0.2	0.3	1.0	1.8
Grain	0.2	0.4	1.4	4.0
Livestock	0.2	0.3	1.7	11.9
Poultry	0.1	0.3	3.9	1.6
Serv. & Farm Sup.	0.3	0.6	1.8	5.8
Sugar and Rice	0.5	0.4	0.7	2.0
Tobacco	0.4	0.6	0.6	1.6

The data presented in this section illustrates significant differences between the Italian and American cooperatives both in terms of size and financial structure. Particularly, the small size and the undercapitalization of Italian cooperatives seemed to prevent them from achieving a higher efficiency. The industrialization process of Italian cooperatives appears to be slower compared with the US. The following sections elaborate on these conclusions through a more extensive financial analysis of the Italian cooperatives and a description of their strategic trends.

3. Financial Analysis of Italian Cooperatives.

The revenue concentration was one of the most important characteristics of the sample. Table 2.1 (columns B and C) reports two sector concentration ratios measuring the percentage of revenues produced by the top 5% and by the four largest cooperatives. The index values were 62.2% and 20.9% respectively, confirming that a relatively small number of cooperatives produced most of the revenues. In support of this conclusion, the Lorenz curve for revenue distribution is reported in Figure 2.2. The graph shows that 90% of the cooperatives produced only 27% of the revenues. The sample data suggests a remarkable gap between a large number of small cooperatives and few, larger enterprises that controlled most of the revenues.

Figure 2.2: Lorenz Curve for Revenue Distribution for Italian Cooperatives



The revenue concentration varied across sectors significantly (table 2.1, columns B and C). The data showed that the most concentrated sector was poultry, in which the four largest cooperatives produced 84.7% of the revenue. In livestock and services and farm supply sectors, the top 5% of the cooperatives produced more than two thirds of the total revenues. The least concentrated sectors were grain, tobacco, olive oil and wine.

Columns E, G, H, I of table 2.1 report the average revenues, assets, workforce and members per cooperative pointing out the differences in the scale of the operations. Particularly, poultry and sugar and rice cooperatives were significantly above the average, while joint farming, forestry and olive oil enterprises were representative of small scale operations. In terms of the percentage of the total sample revenues (column D), dairy, poultry, fruit and vegetable and wine

cooperatives presented the highest values, stressing the focus on traditional Italian products. Olive oil cooperatives, even though their number was large, represented only 1% of total revenues because of their small average size.

The average revenues per member give insight into the member-cooperative interaction (column F of table 2.1). The values can be considered proxies of the impact the cooperative had on the members' farm revenues: higher revenues per member imply that, after having covered the cooperative production costs, more resources should be available to be transferred to each member. The data reveals that poultry and dairy cooperatives had high average revenues per member versus olive oil, wine, joint farming, forestry and the grain sector. The latter sectors presented the lowest average values suggesting that the cooperative's effect on members' income was minimal. In these sectors, considering the high cooperative and farm production costs, the available income for the farmer is, on average, marginal. This implies that membership of the cooperatives was composed mostly of part time or highly diversified farmers and suggests the influence of non-economic factors on the participation in the enterprise. For example, this is the case of many olive oil cooperatives, which squeeze olives mostly for patrons' self consumption and members participate more because of the higher quality of the product than due to the profits.

Figure 2.3: Distribution of Cooperatives by Classes of Average Revenues per Member

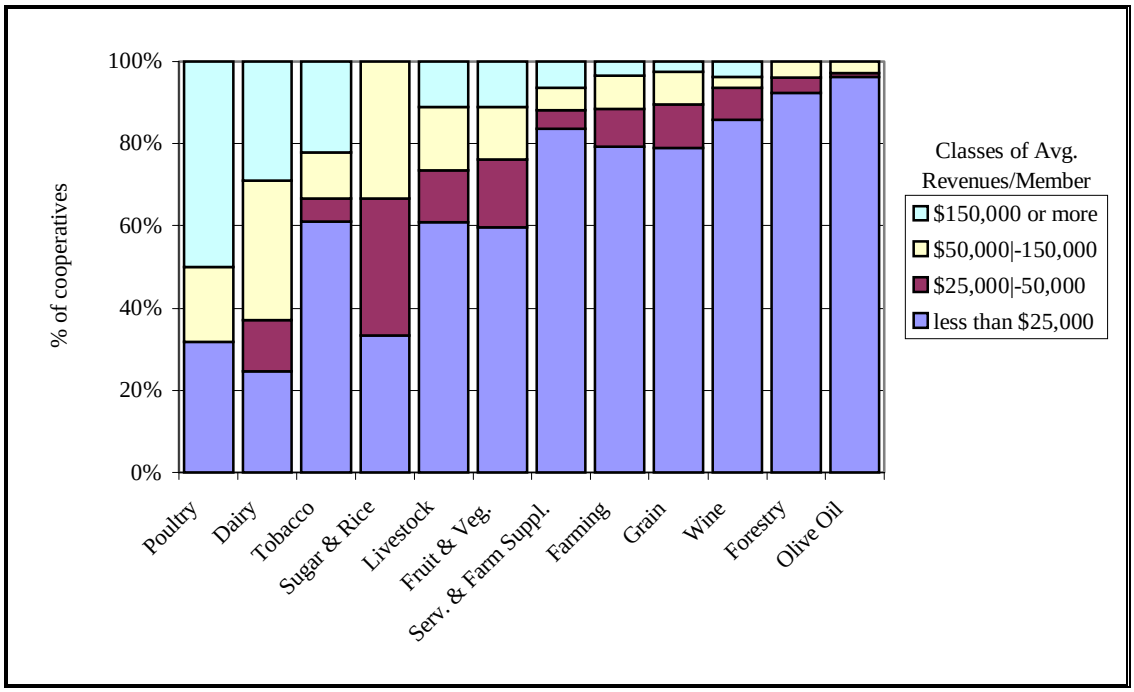


Figure 2.3 integrates the information provided in table 2.1. The figure illustrates the differences in the member-cooperative relationships by providing the percent distribution of the cooperatives by sector and the class of average revenues per member.[8] The data stressed the dichotomy between two organizational structures. The first structure is prevalent in wine and olive oil sectors. These cooperatives on average had a high average number of members (317 and 436, respectively), low average revenues per member and a remarkably fragmented membership. These characteristics suggested a weak complementarity between the members and the cooperative. The second organizational structure, which was widely implemented in the poultry

[8] Eighty four federated cooperatives were excluded from the calculation. The figure reports the percentage of cooperatives in the sector falling in one of the four classes of average revenues per member, because of the uniqueness of the member-cooperative relationship due to the fact that federated cooperatives' members are cooperatives. For example, in the poultry sector, 50% of cooperatives had an average revenues per member of $150000 or more, approximately 20% presented a value between $50,000 and 150,000 and finally 30% had average revenues per member lower than $25,000.

and dairy sectors, had a low average number of members, a stronger complementarity with a more intense interaction with the cooperative.

Table 2.4: Correlation between Cooperative Revenues and per Member Average Revenues[9]

Sector	Correlation Index
Poultry	0.995
Livestock	0.944
Forestry	0.848
Services and Farm Supply	0.738
Tobacco	0.634
Joint Farming	0.631
Dairy	0.539
Olive Oil	0.358
Fruit and Vegetables	0.322
Sugar and Rice	0.110
Wine	0.037
Grain	-0.063

To further investigate and support the previous results, linear correlation indexes were calculated between cooperative's revenues and average per member revenues (table 2.4). There was almost a perfect positive correlation for poultry and the livestock sectors. In these industries, the size of the cooperative was closely linked with the average business volume with members. This implies a growth strategy for the cooperative focused on building stronger links with fewer members with larger operations. In other sectors, such as grain and wine, the two values are uncorrelated, implying a growth strategy for the cooperative based on building a large membership consisting mostly of small producers (as shown by the low average revenues per member). This dichotomy is one of the most important results of the analysis and it highlights a basic difference in the role of Italian cooperatives. Some cooperatives acted in the market as a vertical coordination tool for

[9] Eighty four federated cooperatives were excluded from the calculation.

large and professional producers, while others were focused on processing and marketing the production of a large numbers of small and, in most cases, part-time producers.

The background data illustrated that Italian agricultural cooperatives were remarkably diverse. In the next section this information will be used to identify the strategic trends for these cooperatives.

4. Current Trends in Italian Cooperatives.

The data presented in the previous sections are consistent with three major trends observed in the Italian agricultural cooperatives. The first trend, predominant in the olive oil, forestry and joint farming sectors, is concerned with the needs of local communities and has lower emphasis on the production of direct financial benefits for the members. The cooperatives pursuing this strategy are characterized by having a minimal impact on the members' income. However, these cooperatives play a significant role for the social fiber of the Italian rural communities. They are small and specifically adapted to serving the needs of the local community. These cooperatives appeared to be focused on particular aspects of social demand (such as landscaping, environmental services or production of traditional food). The most important characteristic is the intense tie with the local community, confirmed by strong support either through a large membership or concessions of public land for private benefit. This strategy actually reflects the notion of "multifunctional agriculture" strongly promoted by the renewed EU's Common Agricultural Policy (CAP). A typical example of this approach is given by the forestry cooperatives. Local authorities are willing to give public land for private enterprise use in order to support the socio-economic activity. In exchange, the local communities benefit from the positive externalities produced by the cooperatives (landscaping, eco-tourism, etc.).

The second trend is characterized by the aggregation of a large number of members in a market oriented activity. The membership of these cooperatives is composed of small producers (in most cases part-time farmers) whose primary activity is usually not directly related to the cooperative. The emphasis of this model is on supporting small farm operations. The relevance of these cooperatives came from their ability to process and market the production of a large number of farmers who otherwise would not be able to act effectively in the market. The action of these cooperatives presents remarkable synergies with the EU's policies in support of rural income. Small farmers, using cooperatives and receiving public financial support, are able to avoid significant economic losses that could force them to sell their farmland and quit farming. These cooperatives were predominant in the wine and grain sectors because of the relatively lower minimum efficient scale of production of these commodities.

Finally, the third trend was characterized by an emphasis on the production of profits for professional farmers. The cooperative scale of operations varied from small enterprises, characterized by strategies of product differentiation, to large, industrialized firms. The main characteristic of these cooperatives is the high value of the average revenues per member usually related to the presence of professional farmers who have large scale operations. These cooperatives were predominant in the poultry sectors and had a significant presence in dairy, fruit and vegetables, tobacco and livestock sectors.

5. Summary and Need for Future Research.

The analysis presented in this paper showed that the Italian cooperatives are reacting to the change in the food market by implementing three strategies: 1) focus on the relationships with the local community, 2) focus on the market, 3) focus on supporting small farmers. The former stresses a social role of the cooperatives, the second is oriented to the economic return for the members, while, in the third, the profit goal is integrated with social objectives such as supporting small farmers. These trends reflect the different aspects of the European social demand for agricultural services, making cooperatives able to pursue the multiple objectives characterizing the European model of agriculture recently described by the CAP (European Commission, 1998). Cooperatives proved to be an effective component of the food system and, at the same time, able to contribute to rural development and the preservation of the environment. From this point of view, the ability of Italian cooperatives to attract a large membership of small producers is particularly valuable, allowing many farmer to run their enterprises effectively even in the absence of economies of scale at the farm level and preserving the farm income of rural areas. At the same time, Italian cooperatives proved to be efficient organizations for professional farmers, able to manage the complexity of industrialized agriculture.

The characteristics of the EU's social demand for agricultural services may explain some of the differences between Italian and US cooperatives. The American enterprises were primarily focused on food production, while Italian cooperatives pursued multiple objectives not always directly related to the food system. The broader set of objectives can be considered one of the causes of the slower industrialization process in the Italian sample.

Finally, the survey presented in this paper proposed several issues for further research. The analysis of a single years data set does not allow us to extrapolate the dynamics of the new trends and prevents forecasting of future scenarios. Also, the data stressed the relevance of the member-cooperative relations in the determination of the emerging strategies. A formal analysis model of the influence of the characteristic of the membership on the cooperative decision process could prove useful for the understanding of their economic behavior.

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