COOPERATIVES AND CRISIS: ECONOMIC DYNAMICS IN ITALIAN CONTEXT[1]

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Abstract: This paper focuses on the situation in Italy with specific reference to cooperatives. It aims to analyse their economic situation - represented by two profitability ratios (ROI, ROE) - during the decade 2004-2013. It aims to tests the impact of crisis, geographical area and belonging business sector. Starting from secondary data on AIDA database (at the end 1,446 cooperatives), the trend analysis and analysis of variance (ANOVA) have been used. The findings show, first of all, that the profitability of cooperatives strongly affected by crisis. Secondly, only the business sector affects the level of profitability. The analysis is interesting because the income has a special meaning in cooperatives: it should, in fact, be added to benefiting members that are accounted for as "peculiar" management costs.

Keywords: Cooperatives; Crisis; Return on equity; Return on investment; Profitability.

1. Introduction

The study aims to analyse the economic situation - represented by two profitability ratios (ROI, ROE) - of the Italian cooperatives during the decade 2004-2013. The choice of period is not accidental, nor is irrelevant, given that it includes the previous years, concurrent or subsequent to the 2008 crisis. In fact, although there are significant and widespread signs of economic recovery, the global crisis still affects many geographical areas and a large number of studies are still related to the general economic crisis and its implications on companies. For instance, using an extensive data set on corporate bond defaults in the US from 1866 to 2010, Giesecke et al. (2014) have investigate the macroeconomic effects of bond market crises and contrast them with those resulting from banking crises. Even Gonzalez (2015) has studied the financial crisis and corporate debt maturity. De Fiore and Uhlig (2015) have developed a model explaining the evolving composition of corporate debt during the financial crisis of 2008-09. The topic of CSR and ethics in the economy is tackled by Simola (2014), Pirson and Turnbull (2015), Janssen et al. (2015). With regard to crisis management issue, Morel and Chauvin (2016) identify four methodological challenges. Topper and Lagadec (2013) aim to clarify why the crisis management world has profoundly changed and how the current understanding of crises and theoretical frameworks is becoming increasingly less adequate.

The crisis has had diversified effects, accordingly studies of business administration must necessarily orient themselves with analysis about individual geographical contexts, specific production sectors and different social forms (see, for example, Iwasaki, 2014; Jim and Shinde, 2015; Apostol et al., 2015; Cimini, 2015; Yang and Jiang, 2015). The crisis has also been an incentive to rethink of the current business models, their values and weaknesses and then, to focus the attention on alternative models. So authors do not refer only to globali-

[1] The paper is the result of a collaborative work. However, it is possible to attribute to Floriana Fusco: Introduction, Research Methodology and Results and Discussion sections. The other paragraphs are by Guido Migliaccio.

sation, but also to "glocalisation" and the role that key actors (firms, public sector and academia) can play to increase a more sustainable, innovative and overall regional development. In this direction, the studies on the "coopetition" - the simultaneous occurrence of competition and cooperation – and the collaboration between firms have increased (Granata, Lasch, Le Roy and Dana, 2017; Leckel, Veilleux, and Dana, 2017). Finally, after a period of neglect, the literature has recently focused again on the cooperative model. Specifically, it has stressed the higher resilience of the cooperative business model rather than the capitalist business model (Birchall and Ketilson, 2009; Allen and Maghimbi, 2009; Bajo and Roelants, 2011; Boone and Özcan, 2014; Roelants et al., 2012; Carini and Carpita, 2014, Fusco and Migliaccio, 2015, 2016, 2018).

The present study fits in this last line of research, combining in an original way the exploratory and trend analysis, the traditional financial statement analysis and the statistical approach. It aims to carry out an overview on Italian cooperatives, specifically about whether and how their financial structure changes due to three external factors: a macroeconomic shock, that is the crisis, the geographical location and the business sectors. The topic is particularly interesting in Italy where the cooperatives give an important contribution to the national economy, both in terms of GDP and number of employed (Borzaga, 2014) and taking into account the historic spread patchy (greater concentration in the North and the Centre and lower in the South). Just to give an idea on their relevance, in late 2011, in Italy, 61,398 cooperatives with 1,200,585 employees were registered (Istat, 2012). The third Euricse updates the data to 68,966 units (Borzaga, 2015). Quantifying the contribution to GDP is not easy and often the data is underestimated because of the unavailability of information and financial statement. Anyway, the second Euricse report points out that the cooperative sector directly contributes to the creation of about 3.4% of national GDP and at least 3.5% employment, but the value triples when the effect induced is considered (Borzaga, 2014). At the territorial level, the higher concentration is in northern and central Regions, in terms both of units and of the production value; while about the diffusion between sectors, the higher presence is in agriculture and in some service sectors, such as trade and transport, social assistance and healthcare.

Therefore, the study addresses two research questions:

1) What was the trend of profitability in the last decade in the various Italian geographic areas and business sectors?
2) Are there differences statistically significant between groups? Or, in other terms, can geographical areas and/or business sectors affect the level of profitability?

The hypothesises are that (H_1) the financial crisis did not significantly affect the economic structure of cooperatives, by virtue of their resilience; (H_2) there are statistically significant differences between groups belonging to different business sectors and geographic areas. At this end, the economic situation is assessed using two ratios: the Return on Equity and the Return on Investment; the period considered is the decade from 2004 to 2013; trend analysis, analysis of variance (ANOVA). In the following section the theoretical background is presented, with specific reference to studies related to the social role of cooperatives, their resilience and the peculiar meaning of economic ratios in these companies resulting from their principles. Thereafter the methodology, results and conclusions are discussed.

2. Literature review

2.1 The search for the balance between profit and sociality: the economic dynamic of cooperatives

Cooperative is a company tending to profit, albeit with 'social' objectives (Tessitore, 1968, 1973 and 1998; Zan, 1990). The cooperation – and the collaboration - is put in place if it adds up to extra economic opportunities. According to some authors (i.e. Matacena, 1990; Jossa, 2008), these sociability features make the cooperative business model preferable to the capitalist business model. The cooperative phenomenon, in fact, has been considered as a possible alternative to the capitalist enterprise and, therefore, it has always been subject to economic, political, sociological and even management analysis. The latter aspect, however, is sometimes seemed neglected and subordinated to dominant political ideology. Over the last fifteen years, numerous studies have focused on the cooperative business model as an economic production tool that simultaneously promotes social growth better than the capitalist model.

In this research field, Thompson (2015), for example, highlights the current advantages of worker cooperatives: they may, in fact, be more propitiously situated than conventional firms to achieve the cooperation involved in the development and application of productive knowledge. Meanwhile, they can achieve a better coordination without incurring in potentially adverse effects on cooperation. This ability, however, may be suppressed by a hostile institutional environment. Cooperatives' work has shown greater employment stability and wage flexibility in worker cooperatives vis-à-vis the capitalist firm, as claimed by Navarra and Tortia (2014). They point out the employer's opportunism on wage rigidity in companies capitalists by arguing that the need to fix wages is crucially influenced by the asymmetric distribution of decision-making power and information in favour of the stronger contractual part - the employer -, and against the weaker contractual part – employees -. The capitalist entrepreneur can make decisions, whose negative consequences are borne by workers in terms of lower wages and more intense work pace.

Moreover, cooperatives can encourage the adoption of sustainable consumption and citizen participation in the development of new products, services and systems, such as eco-towns, can, among other things, increase the legitimisation, market acceptance and sustainability impact (Purtik et al., 2016). The greater propensity of the cooperative business model to sustainability and a social-environmental responsible approach has also been underlined (Battaglia et al., 2015; Ruostesaari and Troberg, 2016), as well as its ability to be a privileged tool to promote the growth in developing nations (Román-Calderón, et al., 2014; Avsec and Štromajer, 2015; Pavão and Lipstick, 2015).

The model of cooperative is also fully compatible with family business particularly widespread in some countries such as Italy (Karhu, 2015).

The current literature, however, does not hesitate to show the typical problems that slow down the cooperative development. As people, values and times change, cooperatives also restructure themselves making the reappraisal of cooperative theory topical. Puusa *et al.* (2016) contribute to the cooperative theory by exploring the very core of its ideology, the dual nature: individuality and communality (not social and financial) are two rival forces. The study highlights how individuality gains dominance in a cooperative due to its extreme democracy and flexible structure, and how this deteriorates communality, the bearing force of the community. Thus, authors suggest that finding a balance between the conflicting needs and expectations of an individual member and the cooperative reflects the 'new dual nature' of co-operatives. They also argue that when properly balanced, both shared and individual goals will provide an ideal work community for modern entrepreneurs.

The peculiarities of this business model - and the international principles (that are free and voluntary membership, open to all individuals and so "open door" principle; democratic member control and the "one head, one vote" principle; economic member participation; autonomy and independence; education, training and information; cooperation among cooperatives; interest in the local community) and the national rules (in Italy, mainly Civil Code and Legislative Decree n. 6 of 01.17.2003) that govern them – make necessary to focus on the interpretation to be given to economic dynamics and, generally, of their financial statement (Melis, 1983 and 1990; Mari, 1994; Benni et al., 2005; Congiu, 2009; Belbello and Dili, 2010; Giordano, 2011). The cooperative carries out an economic activity to satisfy the needs of its entrepreneur that can be any stakeholder. The different nature of the entrepreneur changes the system cost-benefit: what is an "external" cost in the capitalist companies, in the cooperative is often the contribution of a member. Moreover, within these, there are distinctions between values obtained by customary exchanges and mutual exchanges. So, it is necessary to distinguish between rebates, indivisible reserves and social loans.

First, the rebates assume different characteristics (Bagnoli, 2008): in the consumer cooperatives they are the repayment of part of the price paid; in the productive ones, they represent the remuneration of the conferment. The cooperative acquires the goods/services of the member liquidating a deposit, unless the price paid to integrate occur with an adjustment payment at year end. The rebate is an economic benefit to the members who deliver goods and/or services. It is proportional to the contribution and not the paid-up capital and it is paid only when there is distributable income.

It should be emphasized that the properly said "distribution of income" is limited by one of the fundamental principles of cooperation which also prohibits the distribution of self-financing at the time of dissolution. The laws of many Countries apply this general principle by establishing that a portion of profit must be allocated to a reserve and/or to a mutual fund to be disbursed to other cooperatives. At other times the possibility of benefiting from certain tax breaks are obtained only by limiting, also at the time of dissolution, the distribution of current profits and reserves.

Moreover, the laws avoid that the subscription of capital is an element of discrimination between the members, because the richest members could prevail. Instead, the capital must maintain the same instrumental function of external financing and must be paid as loans: the profit has to be almost equal to the interest on the current market. The members are, therefore, led to take up little capital and this makes necessary public financial contributions in a start-up phase. However, also after that, unfortunately, the cooperative is often financially weak because the members do not want self-financing for the obligation to allocate the company's assets to third parties, once it will be dissolved. This ban was imposed because the interest of the shareholders must be linked exclusively to the use of cooperative's services and not to its assets.

Therefore, while in the capitalist company the annual income is considered the first indicator of the economy of the business and of its concrete ability to last over time, in cooperative company, it provides a very different explanatory value. In capitalist societies, the ROE is a key index, often compared with that of fair remuneration in order to establish the convenience to start or to extend the life of a company. Contrariwise, in cooperative societies, the Roe, may not have the same indicative power: net income is not the actual profit, because a part of it may have been already attributed to members and therefore accounted for as cost. Properly, it has much more to deal with the current cost of borrowing in the market because many laws engage the cooperative income at that level. So, the Roi has also a very different indicative function in the two types of society: in the cooperative, in fact, the cost of acquisition of goods, materials and/or services from members includes part of the profit. Its interpretation must, therefore, also consider the portions added as rebate to members.

Aware of these limits and with the necessary interpretative cautions, interesting studies on financial and/or economic structure and performance of cooperatives - usually with the focus on specific sectors and geographical area - were performed by Kyriakopoulos et al. (2004), Allen and Maghimbi (2009), Suchanek (2009), Krasachat and Chimkul (2009), Chalomklang (2010), Amadieu and Viviani (2010), Bahrs and Blanck, (2011), Bajo and Roelants (2011), Bronsema and Theuvsen (2011), Aggelopoulos et al. (2011), Hong and Dong-Hyun (2012), Arimany et al. (2014), Boone and Özcan (2014), Loubere and Xiaoquan (2015).

2.2 The resilience of cooperative business model

A recent line of research, still little explored and where this study fits, focuses on the resilience of cooperatives business model to the crisis (Birchall and Ketilson, 2009; Allen and Maghimbi, 2009; Accornero and Marini, 2011; Bajo and Roelants, 2011; Boone and Özcan, 2014; Roelants et al., 2012; Carini and Carpita, 2014). Specifically, in 2014, Fontanari and Borzaga compared the performance of 8,171 cooperatives and 19,466 capitalist enterprises (2006-2010), excluding banks and insurance companies. The growth rates of value added and employment income decreased for both. Cooperatives, however, had rates always positive and higher than limited companies, because they had a cyclical trend that had enabled them to protect places and labor income, while limited companies had limited losses by reducing staff costs. Similar findings in the study of Carini and Carpita (2014), concerning only the industrial sector. Roelants et al. (2012) also point out the importance of the institutional context, noting that cooperatives' resilience is stronger in countries that have the best legal framework protecting and promoting cooperative enterprises, such as the indivisible reserves, mutualized financial instruments, groups and consortia (e.g. Italy, Spain and France). Always taking into account the crisis and geographical factors, Costa and Carini (2016) have assessed the differences in the economic performance and employment levels of social cooperatives in three main geographical areas: North, Central and South Italy, between 2008 and 2011. The results showed that the social cooperatives in these areas increased their overall turnover and total assets. Additionally, the analysis found that the prolonged crisis in 2010 and 2011 affected mainly the southern regions, where conjunctural factors exacerbated the long-term structural deficiencies. In addition Vargas-Cetia (2011) provide a contribute on the importance of the institutional context for the cooperative companies, especially in Italy.

3. Research methodology

3.1 Data collection and sample characteristics

The study fits into quantitative research, based on secondary data sourced by AIDA database. It replies the methodology of a previous work on financial structure of Italian cooperatives (Fusco and Migliaccio, 2015), with the aim to assessing if the discriminating factors chosen also affect the economic performance. The economic situation is represented by two ratios, Return On Investment (ROI) - that is *operating income/investment* - and Return On Equity (ROE), i.e. *net income/equity*. The choice is because they surely are the most relevant and widespread economic, or better profitability, ratios. Initially, the entire population of Italian cooperatives in the AIDA database (14,065 cooperative firms) was considered. The period considered

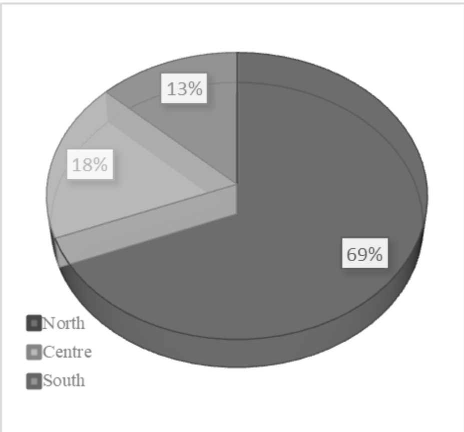
was the last decade, i.e. 2004-2013. Therefore, the subsequent analysis was restricted to the cooperatives where both ratios over ten-year period were available.
The final sample was therefore made up of 1,446 cooperatives.

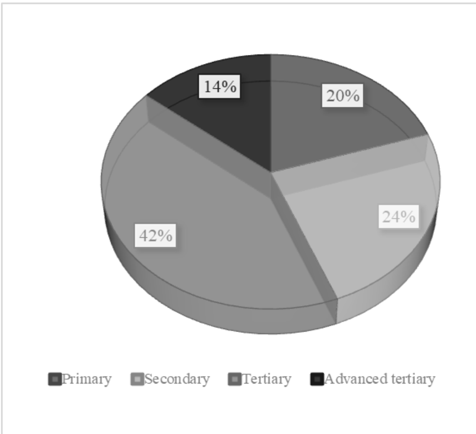
The geographic site of headquarters has been used as proxy to represent the belonging geographic area; while the statistical classification of economic activities in the European Community (NACE Rev. 2 codes) has been used to identifying the belonging business sector. Then three groups (North, Centre and South) are identified according to first factor and four groups (Primary, Secondary, Tertiary and Advanced tertiary) according to the second one. According to conventional classification, the northern Italian regions are Valle d'Aosta, Piemonte, Liguria, Emilia-Romagna, Lombardia, Trentino-Alto Adige, Veneto and Friuli-Venezia Giulia; the central ones are Toscana, Umbria, Marche and Lazio and the southern ones are Campania, Abruzzo, Molise, Puglia, Basilica and the islands Sicilia and Sardegna. With The regard to business sectors, this allocation is used:

- Primary sector: agriculture, forestry and fishing; Mining and quarrying;
- Secondary sector: manufacturing and construction;
- Tertiary sector: Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities; Wholesale and retail trade; repair of motor vehicles and motorcycles; Accommodation and food service activities; Transportation and storage; Education; Human health and social work activities; Arts, entertainment and recreation; Other service activities.
- Advanced Tertiary sector: Information and communication; Financial and insurance activities; Real estate activities; Professional, scientific and technical activities; Administrative and support service activities.

The characteristics of the sample are shown in Figures 1a and 1b.

Figures 1a and 1b: sample characteristics





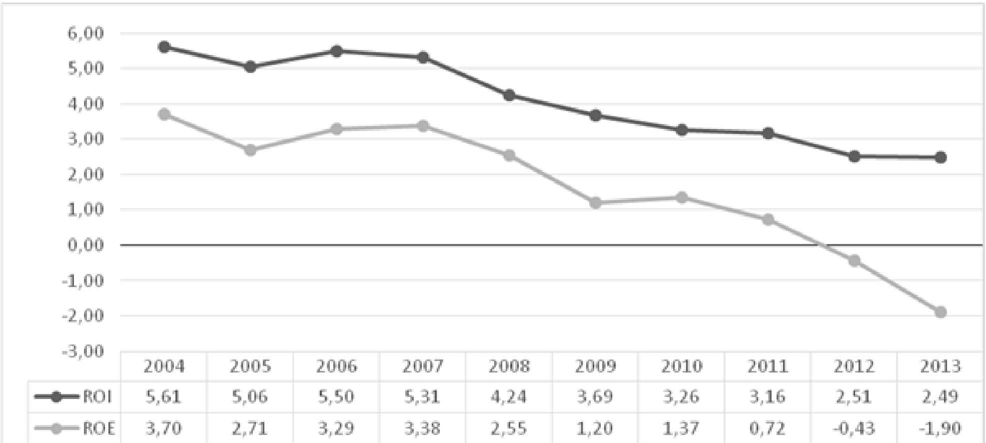
3.2 Method

First, ratios trends are analysed, according to descriptive and exploratory approach. Successfully the analysis of variance (ANOVA) is used to verify how the two discriminating factor affect the profitability or, in other words, if the observed differences are statistically significant. In fact, ANOVA tests hypothesis that the means of two or more populations are equal. ANOVAs assess the importance of one or more factors by comparing the response variable means at the different factor levels. The null hypothesis states that all population means (factor level means) are equal while the alternative hypothesis states that at least one is different. In business, management, accounting and finance research field, analysis of variance is an extremely important method in exploratory and confirmatory data and where the explanatory variable are qualitative (McDougall et al., 1994; Short et al., 2007; Meade et al., 2010; Jan and Marimuthu, 2015; Di Bella and Al-Fayoumi, 2016). In our case, the dependent variables were the ratios considered and factors or independent variables were the geographic localization and the business sector. In this work, the two factors are considered separately, so ANOVA one-way has been chosen.

4. Results and discussion

The analysis of the overall trend - which takes into account the annual average of the sample - reveals a rather negative situation. Both ratios have a declining path and almost parallel with the ROI is always kept at about + 2 percentage points above the ROE (Figure 2). The gap is expanding in the last period in which the return on equity falls to peak and becomes negative, while the ROI, although with modest values, try a slight recovery. The smaller ROE as well as its largest decrease could be found among the leading causes partial ban on the distribution of profits established by law (art. 2524 cc) of profits.

Figure 2: Overall ratios trend between 2004 and 2013



A similar situation can be found in the figures relating to different groups (see Figures . 3-6). The trend is for each one falling, albeit with different intensities. However, it is not surprising, given that in the decade considered there was (and it is not totally finished) a global economic and financial crisis. With regard to the ROI, it is possible to verify that the groups with a higher rate have suffered, generally, a larger decline in the decade.

Figure 3: Trend of Return on Investment (ROI) according to geographic localization

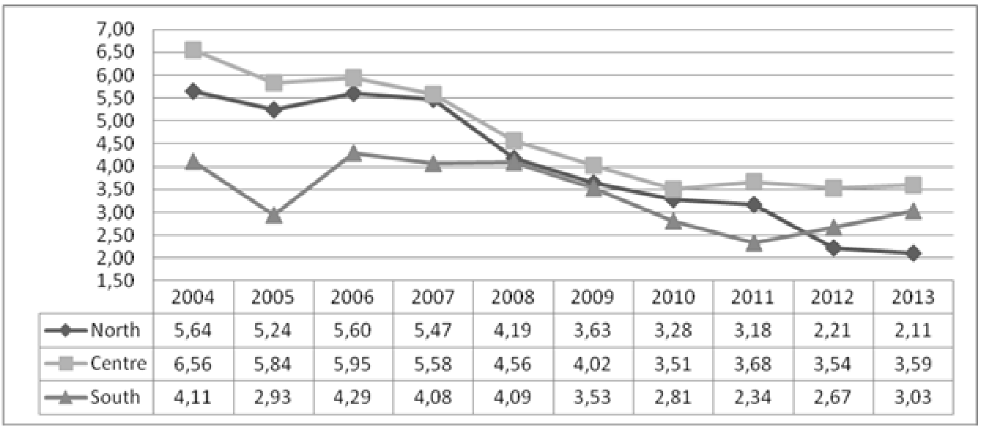
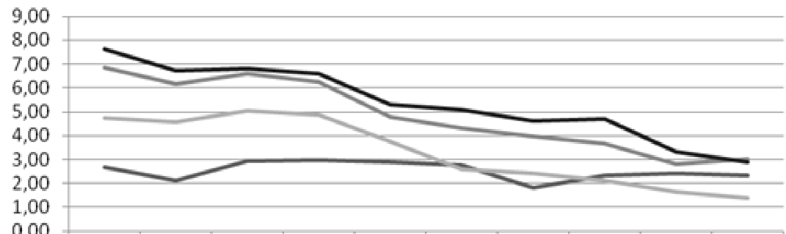


Table 3, indeed, marks a clear decrease for the North and for the Centre (respectively 63% and 45%) and a smaller reduction for the South (26%), with the obvious consequence of a thinning of the gap between groups. The first two groups are similar trends, with strong peaks downward since 2008 as a result of the crisis and the subsequent recession. Only in the last two years, the gap is more evident because of an abnormal reduction of 30% in the North. A more "independent" and fluctuating trend is to the third group, the South, marked by different peaks, both positive and negative. Looking at the different businesses, table 4 shows an almost constant trend of ROI relative to the primary sector, with a decrease of about 12%, while there is a decrease of 62% in the advanced tertiary. Disaggregate data highlight that the businesses mainly negatively affect the trend are the financial and insurance activities and construction sector, with a decrease of 80% and 83%, but also the ICT sector, usually considering one of the most profitability, has a strong reduction (about 48%). Anyway, the downward trend is widespread, only the accommodation and food service business and utilities record an increase.

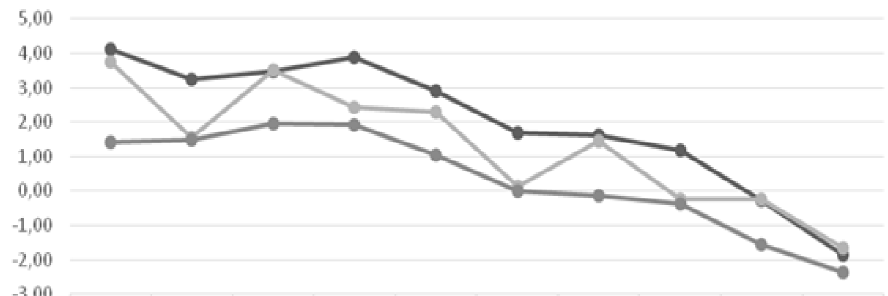
Figure 4: Trend of Return on Investment per business sector



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Primary	2,67	2,13	2,91	3,00	2,89	2,75	1,81	2,32	2,42	2,35
Secondary	4,74	4,58	5,04	4,86	3,75	2,59	2,41	2,11	1,62	1,38
Tertiary	6,86	6,18	6,59	6,24	4,78	4,29	3,97	3,66	2,78	3,04
Advanced tertiary	7,63	6,74	6,80	6,57	5,31	5,08	4,61	4,68	3,32	2,88

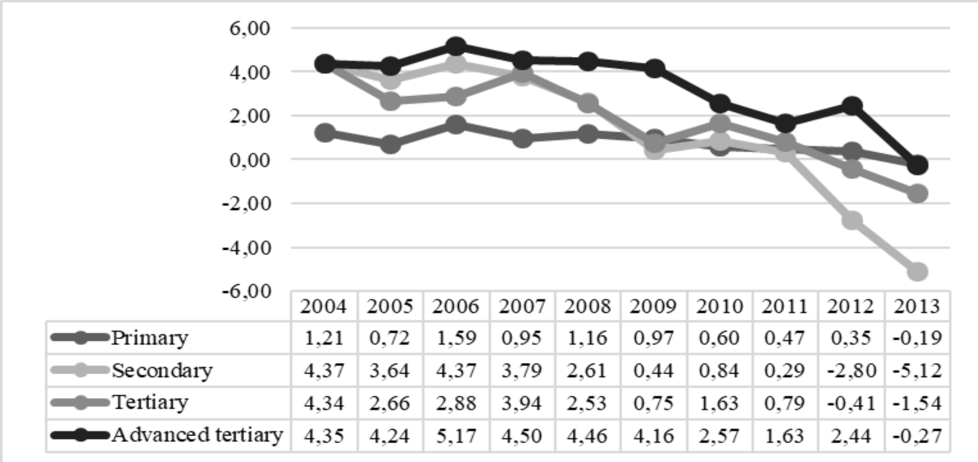
With regard to the ROE, the condition is even more dramatic. Starting with lower rates compared to the ROI and a steady descent, the values are negative for all groups. Looking at the figure 5, all three groups have a negative percentage variation of more than 100%. Even in this case, the gaps between the different groups attenuate, namely those who had a higher profitability, they have, in absolute values, suffered a greater loss. The South, with an already very low rate, has decreased by 268%, that is -3.8 percentage points, while the North and the Centre each have lost about 5 percentage points (that is, respectively, -146% and -144%). Figure 6 shows the trend of different businesses. Consistently with Roi trends, the business with the worst performance is the secondary, with a decrease of 217% (more than 9 percentage point, in absolute), while the primary one maintains more constant values (however, considering the very low values, constancy should be defined stagnation). It is interesting to underline that, as expected, the major collapse of the Roe value is in 2008/2009 for all groups, except for the advanced tertiary, which has the major reduction in 2010.

Figure 5: Trend of Return on Equity (ROE) according to geographic localization



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
North	4,10	3,23	3,47	3,89	2,89	1,69	1,62	1,17	-0,27	-1,87
Centre	3,75	1,56	3,50	2,44	2,30	0,13	1,46	-0,23	-0,25	-1,66
South	1,42	1,47	1,96	1,91	1,06	0,00	-0,12	-0,38	-1,54	-2,38

Figure 6: Trend of Return on Equity (ROE) according to business sector



Therefore, contrary to expectations and prior literature (Birchall and Ketilson, 2009; Allen and Maghimbi, 2009; Accornero and Marini, 2011; Bajo and Roelants, 2011; Boone and Özcan, 2014; Roelants et al., 2012; Carini and Carpita, 2014; Costa and Carini, 2016), the crisis seems to have considerably affected the profitability of cooperatives. However, it should be emphasized that a similar study (Fusco and Migliaccio, 2015, 2018) carried out on the financial structure of italian cooperatives leads to a different findings, namely the lack of the crisis negative impact on major financial indicators. The dissimilar effect of the crisis on profitablity and financial situations should be also be interpreted in the light of the particular meaning of these ratios in cooperatives and the limits on profit distribution. Specifically, the strong profitability reduction could have been a way to safeguard wages and the financial structure. Anyway, these reflections need to be thoroughly investigated and currently the H1 must be considered as not validated.

As said, the study wants not only to explore the economic situation of Italian cooperatives, but also to check if the found differences between independent groups, discriminating according to belonging geographical area and business sector, are statistically significant. In other words, if these factors affect the profitability of cooperatives. At this end, ANOVA has been used. Specifically, the one-way ANOVA compares the means between groups discriminating by one factor (or independent variable) and determines whether any of those means are significantly different from each other. It is important to underline, again, that this method only indicates that at least two groups are different, but not which groups are significantly different from each other. The results show that the null hypothesis must be accepted when geographical localization is taken as discriminating factor for both ROI and ROE. In fact, as reported in tables 1 and 2, ($F(2,27) = 3.29$, $p = 0.052304$), with $F < F$ crit (p value > 0.05), if ROI is the dependent variable and ($F(2,27) = 2.28$, $p = 0.12171$), with $F < F$ crit (p value > 0.05), if ROE is the dependent variable. It means that belonging to a geographical area or to another does not involve any significant differences in the level of profitability.

Table 1: ROI - Analysis of variance with geographical localization as independent variable

Source of variation	*SQ*	*gf*	*MQ*	*F*	*Sig*	*F crit*
Between groups	8.37662115	2	4.18831058	3.29798586	0.05230383	3.35413083
Within groups	34.2889238	27	1.26996014			
Total	42.6655449	29				

Significant level at 0.05

Table 2: ROE - Analysis of variance with geographical localization as independent variable

Source of variation	*SQ*	*gf*	*MQ*	*F*	*Sig*	*F crit*
Between groups	13.7658738	2	6.88293692	2.27924402	0.12171449	3.35413083
Within groups	81.5354983	27	3.01983327			
Total	95.3013721	29				

Significant level at 0.05

The situation is the opposite if the business sector is considered as discriminating factor. Table 3 shows that $F(3,36) = 9.97$, $p = 6.3464E-05$), with F > F crit (p value < 0.05), so the null hypothesis must be rejected and the alternative one must be accepted. In other words, the groups are statistically different. The same if ROE is taken into account (see table 4), the alternative hypothesis is accepted because $F(3,36) = 2.90$, $p = 0.04836619$), with F > F crit (p value < 0.05). Therefore, the business sector seems to affect the level of ROI and ROE.

Table 3: ROI - Analysis of variance with business sector as independent variable

Source of variation	*SQ*	*gf*	*MQ*	*F*	*Sig*	*F crit*
Between groups	52.1375831	3	17.3791944	9.97108325	6.3464E-05	2.86626556
Within groups	62.7465424	36	1.74295951			
Total	114.884125	39				

Significant level at 0.05

Table 4: ROE - Analysis of variance with business sector as independent variable

Source of variation	*SQ*	*gf*	*MQ*	*F*	*Sig*	*F crit*
Between groups	36.6676505	3	12.2225502	2.89649368	0,04836619	2.86626555
Within groups	151.911882	36	4.2197745			
Total	188.579532	39				

Significant level at 0.05

The H2 is partially validated.

5. Conclusive remarks

Contrariwise the hypothesis, the crisis seem to have strongly affected the economic profitability of cooperatives. The trend of both ratios considered is downward. The tendency of Roe and Roi is similar. Moreover, the differences between North, Central and Southern Italy, though present, does not express statistically significant differences; while, there are significant differences between the sectors of the Italian economy. Therefore, it is possible to assume that only the latter is able to affect the cooperatives profitability. The result shown by analysis are consistent with the whole economy. Specifically, there are negative peaks in correspondence of the two periods of recession, that are 2008 and 2011 and the most affected businesses appear to be those of the secondary and, as part of the advanced tertiary, the financial and insurance business. Indeed, the crisis started in 2007 as a financial has had especially economic repercussions. Therefore, the study reveals that the crisis has had a general impact and has substantially eroded the profitability of the cooperatives located anywhere regardless of their activity. The "resilience" that should characterize the Italian and international mutual societies (Fontanari and Borzaga, 2014; Fusco and Migliaccio, 2015) and that would take more resistant than the capitalist enterprises, especially in times of crisis, unfortunately, is not evident from the trend in profitability indicators.

However, the results must necessarily consider the different explanatory power of the profit indicators of cooperatives: the Italian legislation imposes limits to the profits for the reasons above described that characterize these companies. In other words, it is necessary to take into account that both the rebates and the member benefits accorded also represent a part of the accrued profit. If, in fact, the members had held constant a rebate worth more than the market price, the smaller company's profitability could also be caused only by a lower average interest intended to remunerate external funding. In some laws, in fact, the income in the financial statements relates to the cost of money. During the years of the crisis, European monetary authorities have progressively reduced the applicable interest rates as a necessary measure to tackle the crisis and to boost the economy, encouraging investment. At the end to go beyond this present limitation, future investigations, therefore, will consider a different dimension of the profit, that not limited only to the final income. In this direction, the statistical analysis should be deepened through a greater number of variables, including also financial ratios - in fact, the profitability downtrend could have been affected by a financial structure stabiliza-

tion policy – and, on the other, some control and moderating variables, such as the number of employees (i.e. the cooperative size) and the year of experience.
Furthermore, the comparison with a compatible sample of capitalist enterprises could serve to highlight for additional evidence of the resilience (or not) of the cooperative model. In future, carrying out similar researches in other countries will be useful to develop a comparative analysis that takes into account another variable: the culture or, otherwise, the social behaviour and attitudes. In fact, they should also consider the diffusion of the cooperative business model that assumes a widespread culture different from that of the capitalist firm that operates in the free market. In this sense, the proposals made in the international literature for emerging nations, such as, for example, Slovenia (Avsec and Štromajer, 2015), Columbia (Román-Calderón, Battistelli and Vargas-Saenz, 2014) or already growing like Brazil (Pavão and Rossetto, 2015) are to be welcomed.

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