MUTUAL AND SOCIAL EFFICIENCY OF ITALIAN CO-OPERATIVE BANKS: AN EMPIRICAL ANALYSIS

by

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ABSTRACT: *In this study we analyze the concept of efficiency in co-operative banks (CBs) from the points of view of the mutuality and sustainability of business. According to the extant literature, CBs are often less efficient than traditional banks, but the reason for this apparently higher inefficiency is strictly correlated to their statutory commitments.*

The purpose of this paper is to verify, through an empirical survey of 33 Tuscan 'Banche di Credito Cooperativo' (BCC), if a particular type of Italian CB is less or more competitive compared to non-co-operative ones by using and adapting two financial indicators: the financial value added and the cost-income ratio. Our findings show that by implementing appropriate corrections to the value-added indicator and to the cost-income ratio, BCC appear efficient and mission-oriented, with a significantly reduced performance gap in comparison to non-co-operative credit institutions.

Keywords: co-operative banks, efficiency, cost-income ratio, value added, mutuality.

Eficiencia mutualista y social de los bancos cooperativos italianos: un análisis empírico

En este artículo los autores analizan el concepto de eficiencia en el seno de los bancos cooperativos, desde el punto de vista del carácter mutualista y sostenible de la empresa. Según la literatura existente, los bancos cooperativos son a menudo menos eficientes que los bancos tradicionales, pero la razón de esta aparente ineficiencia más elevada está estrictamente correlacionada con sus obligaciones estatuarias.

El objetivo de este artículo es verificar, sobre la base de una encuesta a 33 bancos cooperativos toscanos, si un tipo particular de cooperativa de crédito italiana es más o menos competitiva en relación con los bancos tradicionales, utilizando y adaptando dos indicadores financieros: el valor añadido financiero y el ratio coste-beneficio. Los resultados indican que aplicando las correcciones apropiadas a los mencionados indicadores, los bancos cooperativos aparecen eficaces y orientados hacia su misión, con una diferencia de resultados significativamente reducida comparados con las instituciones de crédito no cooperativas.

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Efficience mutuelle et sociale des banques coopératives italiennes: une analyse empirique

Dans cet article, les auteurs analysent le concept d'efficience au sein des banques coopératives (BCs) du point de vue du caractère mutualiste et durable de l'entreprise. Selon la littérature existante, les BCs sont souvent moins efficientes que les banques traditionnelles mais la raison de cette inefficience apparemment plus élevée est strictement corrélée à leurs obligations statutaires.
L'objectif de cet article est de vérifier, sur base d'une enquête empirique auprès de 33 banques coopératives toscanes, si un type particulier de banque coopérative italienne est plus ou moins compétitif par rapport aux banques non coopératives en utilisant et adaptant deux indicateurs financiers : la valeur ajoutée financière et le ratio coût-revenu. Les résultats indiquent qu'en appliquant des corrections appropriées à l'indicateur valeur ajoutée et au ratio coût-revenu, les banques coopératives toscanes paraissent efficaces et axées sur leur mission, avec un écart de performance significativement réduit par rapport aux institutions de crédit non coopératives.

Mutuale und soziale Effizienz italienischer Genossenschaftsbanken: Eine empirische Analyse

In dieser Studie wird das Effizienzkonzept von Genossenschaftsbanken (co-operative banks = CBs) unter den Gesichtspunkten des Gegenseitigkeitsprinzips (mutuality) und der Nachhaltigkeit ihrer Geschäftstätigkeit analysiert. Nach der vorliegenden Literatur sind CBs oft weniger effizient als traditionelle Banken, doch wird der Grund für diese anscheinend größere Ineffizienz stets in Verbindung mit ihren satzungsmäßigen Verpflichtungen gesehen.
Der Zweck dieses Beitrags ist, durch eine empirische Untersuchung bei 33 toskanischen „Banche di Credito Cooperativo" (BCCs) unter Anwendung und Übernahme zweier finanzieller Indikatoren – der finanziellen Wertschöpfung und des Cost Income Ratios – zu verifizieren, ob ein besonderer Typ italienischer CBs im Vergleich zu nicht-genossenschaftlichen Instituten mehr oder weniger wettbewerbsfähig ist. Die Ergebnisse zeigen, dass BCCs bei Vornahme geeigneter Korrekturen an dem Wertschöpfungsindikator als effizient und auftragsorientiert erscheinen, mit signifikant reduzierten Leistungsunterschieden im Vergleich zu nicht-genossenschaftlichen Kreditinstituten.

1   Introduction

Since the second part of the 19th century, co-operative banks (CBs) have been important actors within the European banking system that are capable of resolving economic and social inequalities in the face of market failure (Bongini et al. 2007). Deeply rooted in the local communities, they are able to create strong relationships among their members based on trust and reciprocity, significantly increasing banking access to small and medium enterprises, farmers, and low income households (Giagnocavo et al. 2012).

The main element that characterizes co-operative banks is their mutual nature. The International Co-operative Alliance (1995) defines a co-operative as 'an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise.' According to the ICA, the co-operatives are characterized by:

- free association and withdrawal of members, resulting in a variable co-operative capital base;
- non-transferability of membership, implying the absence of a market for member shares;
- a democratic structure that usually gives each member one vote regardless of his or her investment;
- restricted profit distribution that is not necessarily proportional to members' shareholdings;
- ownership rights that are limited to the nominal co-operative capital represented by member shares (and therefore do not extend to the reserves and the total economic value of the co-operative);
- and the pursuit of specific member interests rather than profit maximization.

Several categories of co-operatives exist, depending on their purpose and the nature of their members (producer, consumer, or worker co-operatives), but CBs are usually consumer co-operatives since their members are also customers. As a result, the primary aim of CBs is to provide the best possible products and services that fit with the needs of their member-customers in a long-term relationship of trust.

According to the European Association of Co-operative Banks, CBs perform a strong role in EU economies and the banking sectors. In 2010, for instance, CBs were a driving force for socially committed business at the local level, involving over 4,000 member banks, 65,000 branches, 750,000 employees, 50 million members, 176 million customers, 2,852 billion euro of deposits, 3,102 billion euro of loans and 5,524 billion euro of total assets (EACB 2010a). The average market share of the sector is about 20% (weighted average of deposits). In some countries – for example, Austria, Germany, Finland, France, Italy and the Netherlands – the market share lies well above this figure, ranging from 30% to 50% (EACB 2007).

The differences between CBs and other banks can be identified not only by their better customer-monitoring capability, but also in their debt-recovery capacity. In fact, due to their close relationship with the local market and the area in which their borrowers work or live, they have more power in controlling debtors (Berger and Mester 1997).

CBs generally have a high level of capitalization, stable incomes from retail business, and a diversified credit portfolio (Pestana Barros et al. 2010). CBs maintain a customer-oriented business model – including their ownership and governance structures – that benefits the EU, its banking system, its small and medium enterprises, its consumers, and its economy. In fact, CB member-customers are fully involved in the decision-making process of the bank, since they control the co-operative and exert checks and balances at each level of the business, allowing organizations to minimize risk, identify creditworthiness, and promptly respond to customers' needs.

Even though these small financial institutions present a homogeneous business model, their performance is strongly influenced by the economic conditions of their local markets and by the necessity of satisfying their member-customers. The efficiency measurement of CBs has to account for the heterogeneity of social and mutual commitments in favor of their members and the local community. Thus, from an economic point of view, CBs are often thought to be less efficient than non-co-operative ones. The root

cause of this apparently higher inefficiency is the CB's statutory commitments, that is, fostering responsible behaviour by implementing democratic principles of governance and focusing on retail banking (Stefancic 2010a).

The purpose of this paper is to verify if a particular type of European CB, the Italian 'Banche di Credito Cooperativo' (BCC) (Di Salvo and Lopez 2010), is less or more competitive compared to non-co-operative ones, by using and adapting two main financial indicators: the financial value added and the cost-income ratio (CIR). We also aim to estimate socio-economic effectiveness and efficiency of a sample of BCC by considering the special relationships these banks have with the territory in which they operate. Cost efficiency is a fundamental goal for CBs, since wise cost management may guarantee the survival of the business and, consequently, the continuity of activities and services provided to members and customers.

The Italian co-operative banking system was established towards the end of the 19th century, with the foundation of the first 'Casse Rurali and Artigiane' banks among the rural population. They aimed to provide loans at advantageous conditions, basing their policy on very close attention to individuals while at the same time depending on the self-financing capacity of their members. Ever since, each BCC (the new denomination of 'Cassa Rurali and Artigiane' after a legislative reform in the 1990s) has maintained a close and profound relationship with its reference territory, interweaving its own history with that of the local community (Stefancic 2010b).

The Italian BCCs constitute a particularly interesting case for our research aims, for two main reasons:

- according to the EACB and Battaglia et al. (2010), Italian CBs have around 110,000 employees, 14 million customers, 2 million members and one third of the market share of Italian banking deposits, playing a fundamental role in the Italian banking system. Furthermore, the Italian co-operative credit sector is the third largest in Europe (11% of the European co-operative banking sector), after France and Germany;
- Italy has a territory with different economic, social, and demographic conditions and CBs are strictly rooted in their local communities.

Since the connection with the local community represents an influential factor in evaluating BCC performance, we decided to analyze the particular regional context of Tuscany, where this kind of relationship is historically and culturally consolidated.

In Tuscany BCC were created among rural communities to grant more favourable loans to local farmers and artisans, focusing on people and relying on their members' self-financing capability (Silipo 2009). Since then, each BCC has kept strong and deep ties with its territory, interweaving its history with that of the local community.

In the following sections we:

- analyze the existing literature that estimate efficiency in CBs and examine the role of reporting and performance indicators in evaluating overall performance by management;
- describe the sample used for our own empirical analysis and the process of efficiency definition through the choice of opportune indicators;

- discuss the results obtained, present our conclusions, and outline the limitations of the present study and possible further research.

2   Literature review

The literature shows that the selection of performance indicators affects performance results and the evaluation of an organization's performance (McNamara and Mong 2005; Tange 2003). This assertion can be interpreted in light of the functions and effects of reporting in third sector organizations (including non-profit and co-operative ones) according to positivist and critical theories of accounting (Palmer and Vinten 1998).

Under the positivist theory of accounting reporting, data contained in the report is able to correctly describe the real organizational performance (Whittington 1986), while under the critical theory of accounting, even if the real situation is not totally represented, accounts and reports carry out a fundamental function of internal control and, from an organizational point-of-view, are powerful operating mechanisms (Chua 1986, Power and Laughlin 1996, Lukes 1974). As such, organizations use reporting systems to represent rational management performance and, consequently, to improve levels of process efficiency and effectiveness, as well as overall performance (Nicholls and Cho 2006). If the tool used does not result in a true and fair view of the situation, it follows that its use might lead to wrong or counterproductive behaviour.

The above premises indicate that evaluation of the efficiency of BCC and CBs should be based on integrative techniques of traditional accounting and reporting indicators, using the two accounting approaches previously mentioned (Nicholls 2009). In fact, the characteristics of the customers and the peculiarities of the relationship between customers and local CBs point out a different nature of these intermediaries with respect to the overall financial system (Gutiérrez 2008).

More comprehensive indicators of efficiency that focus more strongly on quantification of mutual and territorial impact are held to be coherent with both positivist and critical approaches. This thesis is confirmed by the lack of traditional financial indicators in measuring the effective results obtained by mutual entities to the benefit of their main stakeholders. Although working from a theoretically positivist viewpoint (the possibility of measuring generated impact), these models tend to concentrate on integrating traditional financial indicators in order to strengthen the strategic and organizational control levers that can be activated to improve effectiveness and efficiency (critical theory).

Furthermore, a specific characteristic of CBs – and particularly of BCC – is their commitment to the benefit of local communities (EACB 2010b, 2010c). CBs emphasize the common good of society and foster self-help, responsibility, and solidarity. They were historically founded to improve access to finance for their members who would have had otherwise limited access to finance at reasonable conditions. As a result of this philosophy, CBs participate in a range of schemes, such as microfinance and financial education of groups such as the long-time unemployed. They also have a tradition of fostering the development of their local communities through cultural sponsorship initiatives, responsible citizenship, and foundation activities. CBs are also among the market leaders for socially and environmentally responsible investment products, such

as funds and savings accounts. Green finance is increasingly gaining importance, as a variety of investment solutions allow the customers of co-operative banks to contribute to the preservation of the environment.

We believe it is possible to take into account the BCC orientation within the local community in order to verify whether BCC are less or more competitive compared to non-co-operative ones, using the two previously mentioned indicators (the financial value added and the CIR). Thanks to these integrations, in a positivist approach to accounting and reporting practices, BCC performance appears closer to the reality, that is efficient and mission-oriented, significantly reducing the gap with non-co-operative credit institutions.

These integrations are even more necessary if we consider that there is empirical evidence (Battistin et al. 2012) that territorial connections between managers and local banks negatively affect the performance of the latter, especially mutual, co-operative, and rural banks. According to Battistin et al. (2012), territorial connections have a negative impact on performance in two ways: through inferior skills, since the person owes his/her position also to the fact that he/she is local; and by protecting the managers after poor performance, thus offering connected managers the perks of longer tenure, lower turnover, and higher survival probability, all of which can potentially hurt future bank performance. Nevertheless, we believe that the performance measurement practices are affected by non-consideration of CBs' mutual commitments. For this reason we decided to adapt the already mentioned indices by taking into account and incorporating in the process of their determination and calculation the statutory duties of the Italian BCC in favor of their member-customers and their local community with particular reference to the constraint of mutuality.

3   Methodology

The study was based on the following two assumptions.

1. When banks pursue mutual goals, they will appear less efficient than the non-co-operative institutions due to their commitment in favour of members and local communities.
2. The usual system used by banks and financial institutions to evaluate the efficiency of credit institutions does not take into the account the mutual commitment of CBs, since they are compared with traditional banks for the main efficiency indicators.

We believe, according to the literature on the third sector, that mutual commitment is a social and economic value that should be safeguarded and enhanced by financial authorities and public actors.

In order to answer the exploratory research question as to whether a simplistic and insufficiently reasoned application of efficiency indicators – such as value added and CIR – leads to unsatisfactory valuation of banks' performance (Favero and Papi 1995), we conducted an empirical analysis on a judgmental sample of BCC that were particularly

committed, because of an explicit statutory commitment, towards their members and the local community.

We estimated the change in:

- the levels of value added created and distributed to the main stakeholders by the entire regional system (33BCCs);
- the CIR of the single CBs making some corrections to these indicators according to the Italian Federation of BCC (Federcasse) sustainability reporting criteria and guidelines; this was accomplishe by using a sample of 24 BCCs (out of 33).

We strongly believe that efficiency levels of CBs are too often evaluated, both at national and international levels, without considering their mutual nature. Furthermore, the socio-economic impact of CBs can be judged only by measuring the results obtained against the situation that would have occurred if bank services and activities had not been provided.

In this study we utilize data collection methods with particular reference to archival analysis (33 BCC financial statements analyzed), direct contacts with 33 BCC, and participant observations with Federcasse delegates. According to Eisenhardt (1989), our multiple 'case studies' approach incorporates both quantitative and qualitative data and begins as close as possible to the ideal of no preconceived theories to be tested. However, we determined the research question and some variables prior to commencing the research (Siggelkow 2007).

We decided upon multiple data collection methods according to the next step of Eisenhardt's process (1989), with particular reference to archival analysis (financial statements), interviews, and participant observations. Multiple methods, in fact, facilitate triangulation of the data and therefore contribute to strengthened hypotheses and constructs (Yin 2009).

Upon completion of data collection, data analysis began at within-case analysis level so that the research team was able to gain a deep familiarity with each case (Eisenhardt 1989, Yin 2009).

In this sense, the contribution provided by our study with respect to the existing literature is manifold.

First, it is one of the few studies dealing with the connection between efficiency and accounting and reporting practices in CBs. More specifically, we aim at verifying whether CBs are less or more competitive compared to non-co-operative ones, by using two indicators: financial value added and CIR. We believe there is a lack in the literature on this subject, while also noting that the number of studies in the field of efficiency measurement in CBs is still small (e.g. Worthington 1998, Frame and Coelli 2001, Williams and Gardener 2003, Glass and McKillop 2006, Battaglia et al. 2010). Furthermore, studies dealing with CBs' efficiency usually estimate a common frontier without accounting for country regional differences (e.g. Altunbas et al. 2001, 2003, Hasan and Lozano-Vivas 2002, Maudos et al. 2002, Girardone et al. 2004, 2009, Weill 2004).

Second, our study focuses on a specific region of Italy (a very useful laboratory setting for analyzing the impact of mutual and territorial commitment by BCC) and

considers a wide-ranging set of context variables (e.g. financial returns to member-customers, donations to the local community, financial support to the local economy, and the mutual and co-operative regional and national system in intergenerational perspective). The research also takes into account the performance gap with non-co-operative credit institutions and attempts to estimate its real consistency in light of the particular mission of BCC. The data of our sample are compared with those of the Tuscan Federation of BCC and of the entire Italian banking sector. This was done for two reasons: Tuscan banking variables fundamentally correspond to national variables, according to both the Italian central bank (Banca d'Italia) and the Tuscan Regional Institute for Economic Planning (IRPET). Furthermore, there is no significant presence of autonomous local (regional) banks that are different from BCC (IRPET 2008, 2011). Regional banks are nowadays part of national and international banking groups.

Third, we demonstrate that simplistic and insufficiently reasoned application of efficiency indicators in the co-operative sector – such as value added and CIR – leads to unsatisfactory valuation of banks' performance (Favero and Papi 1995).

The study was conducted using the BCC financial statements available in the Tuscan Federation (FTBCC) database. We also asked individual banks for more detailed information about specific cost and income data related to members and local communities. In particular, we collected the consolidated statements for 2009 and 2010 of all 33 banks of the Tuscan Federation, and received more detailed information related to the calculation of cost/income ratio and cooperative costs from 24 banks for the same years.

2009 and 2010 constitute the last period not influenced by the Italian national debt crisis, including the fluctuation of interest on government bonds (securities), which had a great impact on the banks' financial statements. Furthermore, in these years Italian banks had been less influenced by the global financial market crisis, due to different asset allocation against other European competitors. According to the Italian Banking Association (Associazione Bancaria Italiana-ABI, 2009a, 2009b, 2010) in 2008 financial assets in the Italian banking system represented 18% of total assets against 47% of the European average. This percentage grew to 19.5% in 2009 in comparison to 39.5% of the European average. Given the parameters of the sample, the analysis was carried out adopting two financial indicators: value added and CIR. On the values of global amended CIR we performed some statistical analysis (t test, correlations and regressions) in order to understand the real impact of the amendments. The same process has not been possible for the value added since the Tuscan federation of BCC calculates only the aggregate data at the regional level; the data on individual BCCs is simply not available.

4   The value added statement

The value added statement uses information from financial accounts to calculate the value added by an organization through transformation of externally purchased goods and services (Burchell et al. 1985). It looks beyond income to encompass ownership and includes the wealth created for a wider group of stakeholders (Mook et al. 2003) by

transforming the traditional income equation:

$$\text{Revenues} - \text{Expenses} = \text{Income}$$

into the following:

$$\text{Revenues} - \text{External Expenses} = \text{Income} + \text{Internal Expenses} = \text{Value Added}$$

The point here is how to split total expenses into internal and external ones, and there are several possible approaches (Bagnoli and Megali 2011), also considering international co-operative principles (International Co-operative Alliance 1995).

Applying the value added statement to BCC, the records required and tracked in the income statement have been reclassified introducing the traditional social key reading focused on economic and social value added. Furthermore, we calculated the advantage for member-customers, including the economic advantages obtained through lower interest expenses.

In order to describe and quantify the latter kind of benefit, we compared the different BCC customer interest rates between members and non-members. Then we applied the difference due to the non-members higher interest income rate to the member loans and the difference due to the lower non-members interest expenses to the member deposits. We then calculated the members' advantage, which is usually not disclosed in ordinary financial statements.

Table 1 expounds the consolidated financial statements of the 33 Tuscan BCC from a value added point of view for the years 2009 and 2010. Data had been consolidated by the Tuscan Federation in order to eliminate the operations between the BCC and are not therefore available on a single-bank basis.

Table 1 – Quantification of the value added 2009–10 in the 33 Tuscan BCC

	2010	2009
Total revenues	588,862,645	687,435,519
External costs	−368,987,001	−450,733,166
Member-customer advantage	306,277,000	153,773,000
Value added	526,152,644	390,475,353

The member economic advantage has been added, in order to quantify the actual value added by a co-operative organization.

The value added has been distributed as follows:

Table 2 – Distribution of the valued added 2009–10 in the 33 Tuscan BCC

	2010	2009
Amortization	16,755,505	16,530,925
Staff	171,946,711	164,827,668
Member-customer advantage	306,277,000	153,773,000
Taxation	14,788,279	17,368,606
Profit	16,385,149	37,975,154
Value distributed	526,152,644	390,475,353

The BCC affiliated with the Tuscan Federation obtained a value added of more than 390 millions of euro in 2009 and more than 526 millions in 2010. Profit has been paid out and or retained as follows:

Table 3 – 2009–10 profit allocation in the 33 Tuscan BCC

Profit allocation	2010	2009
Legal reserve (retained earnings)	19,895,798	41,619,528
Co-operative funds	861,930	1,515,350
Dividend payout	1,867,639	2,301,887
Stock revaluation (free)	108,349	231,196
Charity and mutuality	2,428,857	4,743,482
Profits distributed in proportion to members transactions	235,000	100,000
Losses	−9,012,424	−12,536,289
	16,385,149	37.975.154

Value added has been distributed to stakeholders as it follows:

- the strengthening of the single bank system (amortization and retained earnings);
- the members (dividends, stock revaluation, sums distributed in proportion to members transactions with the bank, and member-customer advantage);
- the staff;
- the community (taxation and charity);
- the co-operative system itself (3% of the yearly profit to co-operative funds).

Table 4 – Distribution to main stakeholders of the valued added 2009–10 in the 33 Tuscan BCC

Value distributed (with split profit)	2010	2009
System strengthening (amortizations, retained earning, net of losses)	27,638,879	45,614,164
Members	308,487,988	156,406,083
Staff	171,946,711	164,827,668
Community	17,217,136	22,112,088
Co-operative system	861,930	1,515,350
	526,152,644	390,475,353

5   The amended cost-income ratio

The CIR – operating costs divided by operating income – is a key bank efficiency measure which is useful to evaluate how costs are changing compared to income (Burger and Moormann 2008). When related to CBs this indicator shows some limitations with regard to its capacity to measure real performances. These banks are characterized by a strong originality, looking at the democratic principle (one person one vote), mutuality, and presence in local territories and remote areas (Eacb 2010c). These characteristics call for amending the traditional CIR by recording the higher operating expenses and the decline in revenues achieved while pursuing their

mission. To reach a reasonable degree of objectivity only the expenses have been analyzed, mostly because hypothetic higher revenues are particularly difficult to estimate. In particular, the adjustments discussed above concentrate on two areas: Members and Communities.

a) members

We calculated the difference between the CIR and its value if there were no members.

Considering the operating costs (OP), we decided to amend:

- costs sustained for non-banking members services (NBS)
- costs sustained for member information, participation, and co-operative identity (IPC)
- staff cost for member initiatives (SC)

In formulae:

MEMBER CIR (MCIR) = (OP − NBS − IPC − SC)/OPERATING INCOME

b) Communities

We calculated the difference between the CIR and its value if there were no community commitment.

Considering the operating costs (OP), we decided to amend costs sustained for sponsorship (SP), territory (T) and the dedicated staff (SC).

In formulae:

COMMUNITY CIR (CCIR) = (OP − SP − T − SC)/OPERATING INCOME

Moreover, we decided to calculate a global amended CIR (GACIR), that is a ratio which includes both the member and the community adjustments.

In formulae:

GLOBAL AMENDED CIR (GACIR)
= (OP − NBS − IPC − SP − T − SC)/OPERATING INCOME

Tables 5 and 6 show CIR, MCIR and CCIR and GACIR of the 24 (out of 33) Tuscan BCC who decided to collaborate to the research project.

The BCC's common CIR – looking at the single banks, the Tuscan region (FTBCC), or national (Federcasse) consolidated statements – has worse ratios than the global Italian banking system. This is due not only to bank inefficiencies – small size, co-operative governance – but also, and sometimes mainly, to mission related expenses which traditional banks do not support. Pointing out the amended CIR chart, performance of the BCCs, as single banks and in the Tuscan region (considering the 24 BCC

Table 5 – CIR, MCIR, CCIR and GACIR of the 24 (year 2010) (out of 33) Tuscan BCC

BCC - year 2010	CIR	MCIR	CCIR	GACIR	Difference
Anghiari e Stia	66.45%	64.97%	63.97%	62.53%	3.92%
Area Pratese	79.73%	78.27%	77.50%	76.06%	3.67%
Chianti Fiorentino	78.33%	75.05%	68.97%	65.91%	12.42%
Costa d'Argento Capalbio	67.55%	61.19%	64.28%	58.07%	9.48%
Cras - Chianciano Terne Sovic. - Costa Etrusca	83.32%	81.13%	81.43%	79.24%	4.07%
Impruneta	80.85%	80.45%	78.86%	78.47%	2.39%
Maremma	81.56%	77.00%	75.22%	70.77%	10.79%
Masiano	64.77%	59.89%	62.48%	57.69%	7.08%
Montagna Pistoiese	91.35%	88.42%	90.49%	87.58%	3.77%
Montepulciano	73.17%	71.26%	71.09%	69.22%	3.94%
Mugello	63.56%	62.26%	61.45%	60.18%	3.38%
Pescia	75.33%	72.64%	72.69%	70.04%	5.29%
Pistoia	76.09%	74.85%	75.38%	74.15%	1.94%
Pitigliano	80.02%	78.63%	78.46%	77.08%	2.94%
Pontassieve	74.31%	73.33%	71.38%	70.40%	3.91%
Saturnia	78.87%	72.79%	78.35%	72.30%	6.57%
Signa	83.77%	78.64%	82.68%	77.58%	6.19%
Valdarno	83.47%	76.38%	82.15%	75.16%	8.31%
Valdarno Fiorentino Banca di Cascia	76.96%	74.33%	73.05%	70.48%	6.47%
Valdichiana	70.21%	66.23%	67.42%	63.44%	6.77%
Valdinievole	71.14%	68.50%	70.14%	67.52%	3.62%
Versilia - Lunigiana - Garfagnana	87.47%	86.93%	84.71%	84.18%	3.28%
Vibanca	78.03%	73.57%	76.60%	72.19%	5.84%
Vignole	71.02%	67.86%	69.93%	66.80%	4.22%
2010	CIR	MCIR*	CCIR*	GACIR*	Difference*
FTBCC - consolidated statement	76.39%	73.77%	73.78%	71.20%	5.20%
Federcasse	74.20%				
Italian banking system	64.90%				

*Considering only the consolidated statements of the analyzed BCC.

consolidated amended results) improves, getting close to the average Italian banking system CIR.

Furthermore, the GACIR in the Tuscan region is getting worse because of increasing expenses for members (from 5.436 million euro in 2009 to 5.824 million euro in 2010) and communities (from 7.337 million euro in 2009 to 9.880 million euro in 2010).

At least, we compared the obtained GACIR and Italian banking system CIR because data on regional CIR are impossible to calculate (since the other banks which operate in Tuscany are not local banks). See Tables 7 and 8.

A paired t test was performed to investigate if the difference between the means level CIR and GACIR in 2010 and 2009 was statistically significant for $p < .05$. Tables 9 and 10 show that the mean of CIR in 2009 and 2010 was significantly higher than the mean of GACIR. In this sense, we can affirm that the amendments we made are significant with reference to our BCC sample. See Tables 9 and 10.

Correlations and regression analysis were also performed. Pearson r correlations were conducted in order to investigate the association between traditional CIR and the difference between GACIR and traditional CIR for the years considered. This kind of analysis can help us understand possible correlations between the original levels of

Table 6 – CIR, MCIR, CCIR and GACIR of the 20 (year 2009) (out of 33) Tuscan BCC

BCC - year 2009	CIR	MCIR	CCIR	GACIR	Difference
Anghiari e Stia	61.59%	60.84%	59.79%	59.04%	2.55%
Area Pratese	55.46%	54.64%	53.86%	53.04%	2.42%
Chianti Fiorentino	63.30%	58.69%	57.72%	53.29%	10.00%
Costa d'Argento Capalbio	68.56%	62.47%	65.11%	59.16%	9.39%
Cras - Chianciano Terne Sovic. - Costa Etrusca	74.02%	71.75%	72.36%	70.09%	3.93%
Impruneta	67.57%	67.40%	65.78%	65.60%	1.97%
Maremma	62.96%	59.87%	58.79%	55.74%	7.22%
Masiano	55.68%	51.48%	53.64%	49.54%	6.13%
Montagna Pistoiese	89.85%	86.75%	88.78%	85.69%	4.16%
Montepulciano	70.51%	68.56%	68.15%	66.22%	4.29%
Mugello	63.48%	63.12%	61.87%	61.51%	1.97%
Pescia	69.64%	68.71%	68.02%	67.08%	2.55%
Pistoia	77.20%	59.76%	77.01%	59.61%	17.59%
Pitigliano	77.34%	75.88%	75.18%	73.73%	3.60%
Pontassieve	74.04%	72.95%	70.59%	69.49%	4.55%
Saturnia	73.85%	67.24%	72.50%	65.95%	7.91%
Signa	82.32%	79.84%	81.50%	79.02%	3.30%
Valdarno	68.62%	63.66%	67.43%	62.54%	6.08%
Valdarno Fiorentino Banca di Cascia	61.53%	59.19%	58.48%	56.19%	5.34%
Valdichiana	63.27%	60.39%	60.05%	57.17%	6.10%
Valdinievole	63.54%	62.75%	63.54%	62.75%	0.79%
Versilia - Lunigiana - Garfagnana	80.31%	79.72%	76.98%	76.40%	3.91%
Vibanca	72.57%	69.18%	71.22%	67.88%	4.70%
Vignole	70.42%	66.74%	69.25%	65.61%	4.81%
2009	CIR	MCIR*	CCIR*	GACIR*	Difference*
FTBCC - consolidated statement	69.50%	66.82%	67.79%	65.15%	4.35%
Federcasse	70.20%				
Italian banking system	63.10%				

*Considering only the consolidated statements of the analyzed BCC.

BCC efficiency and the effects of the proposed amendments on the concept of efficiency. Pearson r correlation was not statistically significant ($r = -.027$, $p = .900$) for 2009 or 2010 ($r = .101$, $p = .638$).

This means that initial levels of efficiency (higher the initial CIR, higher the inefficiency of BCC) do not affect the levels of costs sustained, on a voluntary basis, for members and the community. This phenomenon probably happens because the support of this type of costs depends on management decisions – linked with both the community needs and the financial situation of the cooperative – in the two years considered in our analysis.

Pearson r correlation was also used to assess the association between the MC/OC and CC/OC and the GACIR for the years considered. Results are shown in Table 11.

For 2010 the correlations were not statistically significant. For 2009 the association between CC/OC and MC/OC was positive and statistically significant: higher the MC/OC higher the CC/OC. As expected, both the correlation between CC/OC and GACIR and between MC/OC and GACIR were negative, but the former was statistically significant (higher the CC/OC lower the GACIR), while the latter was not. However, it should be noted that the significance of the Pearson statistics is influenced by the sample size.

Table 7 – MC/OC and CC/OC against GACIR of the 24 (year 2010) (out of 33) Tuscan BCC

2010	MC/OC	CC/OC	GACIR
Anghiari e Stia	1.1%	3.2%	62.5%
Area Pratese	1.7%	2.5%	76.1%
Chianti Fiorentino	1.9%	11.7%	65.9%
Costa d'Argento Capalbio	5.2%	4.8%	58.1%
Cras - Chianciano Terne Sovic. - Costa Etrusca	2.6%	2.3%	79.2%
Impruneta	0.5%	2.5%	78.5%
Maremma	4.8%	6.4%	70.8%
Masiano	3.9%	3.5%	57.7%
Montagna Pistoiese	1.7%	0.9%	87.6%
Montepulciano	0.6%	2.8%	69.2%
Mugello	0.5%	3.3%	60.2%
Pescia	1.9%	3.5%	70.0%
Pistoia	0.5%	0.9%	74.2%
Pitigliano	1.7%	1.9%	77.1%
Pontassieve	1.3%	3.9%	70.4%
Saturnia	1.8%	0.7%	72.3%
Signa	4.0%	1.3%	77.6%
Valdarno	0.7%	1.6%	75.2%
Valdarno Fiorentino Banca di Cascia	2.0%	5.1%	70.5%
Valdichiana	5.7%	4.0%	63.4%
Valdinievole	1.7%	1.4%	67.5%
Versilia - Lunigiana - Garfagnana	0.6%	3.1%	84.2%
Vibanca	4.5%	0.9%	72.2%
Vignole	2.6%	1.5%	66.8%
			0.0%
FTBCC	1.95%	3.30%	71.20%

Even if it was not statistically significant, the negative correlations can be considered moderate and interpretable.

After these preliminary analyses, we conducted two linear multiple regressions using the GACIR as dependent variable. In the first regression, MC/OC and CC/OC for 2010 were simultaneously entered into the equation (Table 12). The model as a whole explained the 22.5% of the variance of GACIR. The amount of variance was not statistically significant. However, the low dimension of the sample might have affect the significance of the results.

In the second regression, MC/OC and CC/OC for 2009 were simultaneously entered in the equation. The model as a whole explained the 20.1% of the variance of global amended CIR. The amount of variance was not statistically significant. However, the CC/OC was found to be a significant predictor of GACIR (Table 13).

In conclusion, GACIR seems to be at least in part explained by MC/OC and CC/OC. Specifically, CC/OC plays a major role in explaining the variance. The association was negative for both 2009 and 2010. Hence, a higher propensity to sustain costs for the community is associated with significant lower levels of GACIR. These findings need to be replicated with a bigger sample. Indeed, the non significant predictive power of MC/OC might be associated with the sample size.

Table 8 – MC/OC and CC/OC against GACIR of the 24 (year 2009) (out of 33) Tuscan BCC

2009	MC/OP	CC/OP	GACIR
Anghiari e Stia	1.2%	2.9%	59.0%
Area Pratese	1.3%	2.8%	53.0%
Chianti Fiorentino	4.3%	8.6%	53.3%
Costa d'Argento Capalbio	5.3%	5.0%	59.2%
Cras - Chianciano Terme Sovic. - Costa Etrusca	3.1%	2.2%	70.1%
Impruneta	0.3%	2.7%	65.6%
Maremma	3.8%	6.6%	55.7%
Masiano	2.7%	3.7%	49.5%
Montagna Pistoiese	2.4%	1.2%	85.7%
Montepulciano	2.3%	3.3%	66.2%
Mugello	0.6%	2.5%	61.5%
Pescia	1.3%	2.3%	67.1%
Pistoia	1.5%	0.2%	59.6%
Pitigliano	1.8%	2.6%	73.7%
Pontassieve	1.5%	4.7%	69.5%
Saturnia	4.9%	1.8%	65.9%
Signa	2.9%	1.0%	79.0%
Valdarno	0.5%	1.7%	62.5%
Valdarno Fiorentino Banca di Cascia	2.6%	4.9%	56.2%
Valdichiana	4.6%	5.1%	57.2%
Valdinievole	0.0%	0.0%	62.8%
Versilia - Lunigiana - Garfagnana	0.7%	4.1%	76.4%
Vibanca	3.7%	1.0%	67.9%
Vignole	3.0%	1.7%	65.6%
			0.0%
FTBCC	1.79%	2.41%	65.15%

Table 9 – Comparison between CIR and GACIR means (2010): paired t test

	Mean	Quantity	Standard deviation	t (23)	p
CIR	76.56	24	7.13	9.910	.000
GACIR	71.13	24	7.69		

Table 10 – Comparison between CIR and GACIR means (2009): paired t test

	Mean	Quantity	Standard deviation	t (23)	p
CIR	69.48	24	8.34	7.30	.000
GACIR	64.26	24	8.71		

Table 11 – Pearson r correlations between MC/OC, CC/OC and GACIR

	MC/OC	CC/OC	GACIR
MC/OC	1	.176	− .344
CC/OC	.425*	1	− .382
GACIR	− .165	− .455*	1

*p <. 05.

Note: Correlations for 2010 are reported above the diagonal. Correlations for 2009 are reported under the diagonal.

Table 12 – Multiple linear regression: criterion variable GACIR (2010)

	B	SE	β	t	p
(Constant)	77.507	2.974		26.060	.000
MC/OC	− 1.368	.936	− .285	− 1.461	.159
CC/OC	− 1.083	.638	− .332	− 1.698	.104

Note: R² = .225, ΔR² = .151, p = .069.

Table 13 – Multiple linear regression: criterion variable GACIR (2009)

	B	SE	β	t	p
(Constant)	69.867	3.452		20.240	.000
MC/OC	.200	1.224	.035	.163	.872
CC/OC	− 2.009	.917	− .470	− 2.191	.040

Note: R² = .208, ΔR² = .133 , p = .086.

6   Conclusions

The aim of the present study was to verify whether CBs are more or less competitive when compared to non-co-operatives banks by using and adapting two main financial indicators: the financial value added and the CIR. In the light of the results above, we can affirm that BCCs undoubtedly have lower levels of efficiency compared with traditional banks. However, this gap is much reduced if we modify the calculation of indicators to take into account the mutual aims of CBs.

Our analysis demonstrates that value added, for co-operative banks, must necessarily be reconsidered from a social point-of-view in order to take into account mutual aims. We wanted to add to the financial results the value of the member-customer in order to better define the amount of wealth that was effectively distributed to the various beneficiaries. For this reason, the higher income (from investments and deposits) or the lower costs (for loans) of the member-customer, with respect to the non-member customer, have been counted as internal, not external costs.

Our research showed that 153.7 million euro in 2009 and no less than 306.2 million euro in 2010 were invested by BCC in Tuscany in favour of their member-customers. This information, had the accounting parameter of value added not been reconsidered, would not have emerged from a normal banking sector financial analysis.

With respect to total income of the BCC analyzed (687 million euro in 2009 and 589 million euro in 2010), 390 million in 2009 (57%) and 526 million in 2010 (89%) represent the value distributed to the co-operative system in a wider sense. That is to say, this included BCC self-financing, payouts to members, staff and collaborators, philanthropic contributions to local communities and re-investment of resources to strengthen the co-operative system in favour of future generations.

As far as the CIR is concerned, our reconsideration of accounts brought to light even more interesting data. The median values of the spread between CIR and global-amended CIR in 2010, for the 24 BCC considered, was 5.5 percentage points for 2010 and 4.4 percentage points for 2009. Even more indicative are arithmetic means of the

global-amended CIR of the Tuscan BCC – 64.9% in 2010 and 62.9% in 2009. These are very close to those of the entire Italian banking sector (67.9% in 2010 and 63.10% in 2009), with near-negligible differences of 3 percentage points in 2010 and only 0.2 percentage points in 2009.

In this sense, results show that our re-elaboration of the value added and CIR indicators brings the BCC closer to the national banking average. It should also be remembered that, as previously explained, it was not possible to rectify values of revenues within the CIR indicator. Had this been done, it is highly likely that the differences between BCC and the Italian banking sector overall would have effectively vanished.

It is important, therefore, to measure performance using instruments that are coherent with the mutualist nature of the BCC, adapting the normal banking financial analysis instruments to this case. The corrections made to traditional value added and CIR indicators allowed us to better appreciate the reality of co-operative credit, which appears more efficient and more mission-oriented than in the literature thus far, significantly reducing the performance gap with non-co-operatives credit institutions.

In actual fact, the presumed inefficiency of CBs derives in part from their need to maintain their mutual and social mission. This has interesting repercussions on accounting disciplines, since it questions the need to adapt financial analysis instruments to the special mission of CBs. In this context, some possible developments of the present study would be extension of the sample analyzed in order to generalize the results of this preliminary investigation and, above all, analysis of the socio-economic impact generated by the single BCC on their territories, in order to measure results effectively obtained with respect to the initial situation.

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