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"Small is beautiful"?:
Essays on the cooperative banking sector

The case of credit cooperative banks in Italy from 2004 to 2011

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Abstract

Small Italian banks have experienced a substantial growth since the mid-1990s and have not disappeared in the wave of the liberalization process that started in 1992. Two main reasons have emerged to explain their growth: (i) the consolidation process of larger banks that disregards smaller customers and (ii) their lending strategy based on localism, proximity, small dimensions, and peer monitoring. Small banks could exploit their ability in collecting soft information and they often use them along with hard information to reduce the asymmetries of information and moral hazard issues in transactions.

Among the small banks, cooperative banks have an additional advantage due their member-based ownership structure. They use this to increase the quantity and quality of the soft information compared to other small banks.

Italian Credit Cooperative Banks (Banche di Credito Cooperativo, hereafter CCBs) have performed particularly well in expanding their business and in increasing both members and branches, largely due to the weakening of their legal constraints in 1992. However, this growth has not been homogenous and there are differences in growth patterns at the dimensional and the geographical levels.

This dissertation focuses on three research questions concerning CCBs:

1. *The role of size in the recent growth of CCBs*: the literature on bank's growth has shown mixed results on the relationship between growth and size. In particular, two main features have been studied: (i) the role of size in the growth of loans, assets and members by testing the Law of Proportionate Effect (LPE); (ii) the role played by other covariates in the growth of loans, assets and members by testing a multivariate regression model. Applying these models to CCBs, the results show that LPE is rejected in favour of a negative relation between size and growth—i.e., smaller CCBs have grown faster. Their faster growth is related to the financial variables— the cost-income level and average earnings (or costs) from interest rates. Moreover, environmental variables play a significant role in explaining the growth.

2. *The impact of social capital on the performance of CCBs*: given their cooperative form, lending technology, and control mechanisms, the presence of CCBs are expected to be higher in areas where people are more connected and the level of trust is higher. This assumption is related to a small but growing literature on the effects of trust and social capital on the viability and growth of cooperatives at the macro-level. The impact of social capital variables (number of people joining associations and the trust level) on the market share of CCBs at province level turn out to be positive and significant. The results for the market share hold for both the overall credit market and the specific SME credit market. Moreover, the higher presence universalistic associations (associations pursuing general goals – e.g. environmental protection) as compared to particularistic association (those with a particularistic goal, e.g. sports club) have a positive impact on the market share. Finally, only CCBs seem to gain from the presence of larger social capital in comparison to other local banks

3. *The relation between the governance structure and interest rate pricing as a way to reward members*: CCB members do not usually receive dividends, instead benefit from better financial conditions—i.e., better interest rates. However, while the borrowers are interested in reduced interest rate on loans, the depositors prefer an increase in the interest rate on their deposits. The reward choices of CCBs are described using a model based on the bank's rewarding priorities and the median voter framework is suitably adapted for the CCBs governance structure. An empirical investigation on the impact of the majority composition in the general assembly on the interest rates pricing is attempted. The tests show that the interest rates policies of CCBs match with the median voter prediction in the case of a borrower majority, while a depositor majority kept the interest rates on deposits lower. This could be seen as a way to control the costs. CCBs follow a strategy to benefit both types of members and to be consistent with their balance sheet constraints.

Keywords:

Cooperative Banks, Growth, Relationship lending, Social Capital, Median Voter

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To my parents
who taught me the cooperative behavior,

to my sister
who taught me the budget constrained resource allocation,

to my grandmother
who taught me how to "fare economia",

to Fabio
who taught me the meaning of long term investment

Apologizing to all of them for being such a bad student!

“Ie li miguli chi fa’l toc”

It is from the crumbs that you get the piece of bread
- A Popular Proverb in Trentino

1 Credit cooperative banks[1]: some preliminary issues

1.1 Introduction

The origins of cooperative forms of interaction among people goes back as far as the first efforts by human beings to organise themselves in order to reap mutual benefits. However, it was with the emergence of the industrial society that cooperative forms of enterprises became more structured and spread among several kinds of industries. In 1810, Robert Owen started a new type of business, thanks to which profits were passed on to employees. Through his writing and lectures, together with the newspaper "The Cooperator" which he founded, the cooperative ideology began to spread in England. The first successful cooperative enterprise was the Rochdale Society of Equitable Pioneers, founded in 1844 by a group of weavers and artisans who intended to sell food items. Less than ten years later, in Germany, the first cooperative bank was founded by Franz Hermann Schulze-Delitzsch in an urban area, and in 1864 Friedrich Wilhelm Raiffeisen started the first rural cooperative banks – a model which has been influential over time.

The basic ideological argument for the establishment of a cooperative was the rejection of charity as a way of fighting poverty, together with a commitment to the principle of mutual aid and self-help. Members could express their preference through their right to vote, in the so-called general assembly. Cooperatives brought into the growing market economy the idea that an enterprise or an association should be owned and controlled by the people it served and by its workers. The central mechanism incentivating members' contribution to the cooperative was sharing of profits.

Nowadays, cooperatives are legal entities characterised by both ownership and management by members. The cooperative model is not unique and varies according to the country in which the cooperative is located[2]. In most countries, although not in all, membership is remunerated through a share of the earnings, dividends. Dividends, unlike the case of a joint stock company, are not given according to the value of the shares held, but according to the degree of participation in the enterprise.

Cooperatives are defined as "an autonomous association of persons united voluntarily to

[1] In this essay, the expression "cooperative banks" is used as a way to summarize the expression cooperative financial institutions, and they are used interchangeably. Credit cooperative banks (CCBs) are included in the broader set of cooperative banks, but the expression refers to the Italian case of Banche di Credito Cooperativo. Thus, when the expression "cooperative banks" is used, it includes also CCBs, but not vice versa.

[2] In Finland and Sweden, for instance, cooperatives may take the form of companies limited by shares or by guarantee, partnership, or unincorporated associations. In the UK, cooperatives may take the form of industrial and provident societies. In the US, cooperatives are often organized as non-capital stock corporations, but can also be unincorporated associations or business corporations.

meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise" (ICA, 2012). These enterprises are typically based on the cooperative values of self-help, self-responsibility, democracy and equality, equity and solidarity, which are summarised by the so-called "7 Principles":

1. Voluntary and open membership
2. Democratic member control
3. Economic participation by members
4. Autonomy and independence
5. Education, training and information
6. Cooperation among cooperatives
7. Concern for the community.

Cooperatives are classified into two main types, i.e., producer cooperatives, which include worker and producer cooperatives, and supplier cooperatives, in which members are users, such as consumers, purchasing or housing cooperatives, mutual, cooperative banks and insurance companies. Cooperatives also exist both at the first level of a network or at the second level, i.e., a cooperative whose members are not individuals but other cooperatives or non-cooperative enterprises[3]. Historically, according to Gide (1921: 122), the secondary level has come in the form of either cooperative wholesale societies, aimed to arrange "bulk purchases, and, if possible, organise production", or cooperative unions[4], which were built to "to develop the spirit of solidarity among societies".

Cooperative financial institutions

Banks of cooperative form are common in western countries and in some developing countries. As already mentioned, the first recognised cooperative bank originated in Germany in the mid-19th century. At the beginning of the 20th century, the idea of financial cooperatives reached Canada, where A. Desjardins founded the *Caisse Populaire* in the region of Quebec. In the US, as well as in

[3] As an example, the Unico Banking Group, the largest banking alliance in Europe, was founded in 1977 by six cooperative banking organizations—i.e., Crédit Agricole S.A. (France), DZ BANK (Germany), ICCREA Holding (Italy), Pohjola Bank plc (Finland), Rabobank (The Netherlands) and Raiffeisen Bank International (Austria). Being a second-level cooperative, it acts as a forum and platform for its members, and its mission is to support cooperation among them. The Unico banks are among the most important players on the banking and insurance scene. Their partnership is based on common values, corporate governance, cooperative roots and structure, mutual trust and confidence among partners.

[4] The best historical examples of wholesale cooperatives are the English and Scottish CWS, which were the ancestors of the modern Cooperative Group; a good example of a cooperative union is the International Cooperative Alliance (ICA).

the UK, cooperative banks took the form of credit unions[5], originally worker-based cooperatives, which now offer services to a wider community of members.

Among Europe, the most important banking cooperatives were the *Crédit Agricole* in France, the Migros and Coop Bank in Switzerland, the Raiffeisen system in German-speaking countries, the Rabobank in The Netherlands, the OP-Pohjola Group in Finland, and the Spanish cooperative banks. In Scandinavia, there is a clear distinction between mutual savings banks and cooperative banks. In Italy, after the conversion of the mutual saving banks into either foundations or commercial banks, two types of cooperative banks currently exist: mutual cooperative banks (Banche Popolari), and credit cooperative banks (Banche di Credito Cooperativo) (hereafter CCBs). The countries of Eastern Europe have been less dynamic in their development of the cooperative form of banking, probably because banking networks were nationalised under the communist regime. However, a remarkable development has taken place in Poland, where the SKOK (*Spóldzielcze Kasy Oszczednosciowo-Kredytowe*) has become larger than the largest conventional Polish bank.

Although cooperative banks share the same principles and values, their organisational forms are largely country-specific. In particular, the integration and coordination among cooperative banks can move from a highly integrated system, like the Rabobank or the Finnish OP-Pohjola Group, in which a single bank has a low level of autonomy and decision-making processes are largely centralised, to a more autonomous system, like the Italian case, in which CCBs are members of the regional federation but are autonomous entities and take decisions independently of the second-level network.

The focus of this thesis is on Italian CCBs. They are a heterogeneous group of banks, spread variously around the country. The reasons to study these cooperatives are as follows:

1. Italian CCBs, after the liberalisation of the Italian banking industry in 1993, have not disappeared, as some authors forecast[6];
2. From 1993 until 2007, Italian CCBs have doubled their overall market share, showing a dynamism, which conventional banks have not experienced, and reaching a quota of almost 8 per cent. Although this quota is still marginal as regards the overall banking market,

[5] During the 1980s and 1990s, most credit unions in the UK were demutualised and converted into conventionally owned banks.

[6] In Alessandrini, Papi and Zazzaro (2002: 3) it is stated: "Le piccole banche locali o sono capaci di adeguarsi ai livelli di efficienza delle grandi provenienti dall'esterno oppure scompariranno con evidenti vantaggi in termini di benessere per la collettività" ("Small local banks must either reach the efficiency level of the larger outside banks, or they will disappear, with evident advantages in terms of wellbeing for everyone").

considering their market of interest, mainly made up of SMEs, CCBs account for 20 per cent of the market;

3. During the financial crisis, which started in 2007, Italian CCBs, unlike conventional banks, maintained a positive (although lower) rate of growth, not only of their assets but, more importantly, also of loans.

The Banking Law of 1993 tried to preserve the peculiarities of CCBs by keeping them as close as possible to their original model as financial cooperatives, operating as small local banks in mostly rural areas, for the primary benefit of their members. Unlike commercial banks, CCBs benefit from fiscal exemption on retained profits, which are allocated to reserves. In turn, they are prohibited from issuing tradeable shares and must allocate at least 70 per cent of their profits to reserves. Moreover, being non-profit organisations, their members who oversee the banks are not allowed to receive any net earnings, a tool usually implemented in commercial banks to attract investors. Not only are CCBs limited as regards individual participations in the banks, they are also restricted as regards banking operations. Loans are granted primarily to members, and assets, which qualify for zero-risk weighting must account for at least half the risk-weighted assets (Ayadi, 2010).

The financial crisis has revealed how these peculiarities have helped CCBs to be a resilient model of business, thanks to their ability to create lasting relationships with members, based on trust. According to Guiso (2010), the level of trust towards banks has fallen dramatically. Among the various reasons, one of the most important is the choice of banks to undertake the more risky path of growth, not based on the traditional form of banking earnings - i.e., interest margins. CCBs have remained closer to this traditional banking business model. They “play an honest game” (Guiso, 2010:21). Their constraints on the distribution of earnings and the composition of their at-risk activities have preserved them from moving towards more opportunistic behaviour.

From a theoretical viewpoint, it is essential to investigate those features to understand why CCBs should be considered as different. In the following pages, a theoretical framework is provided as support for further analyses.

1.1 Theoretical Framework

CCBs were founded with the aim of facing problems, which derive from credit rationing and economic marginalization. This innovative type of enterprise, which emerged at the end of the nineteen century, is characterized by its ownership structure, by means of which stakeholders interested in the services provided own the firm. According to Hasmann and to Harte’s life-cycle model, cooperatives are useful to mitigate initially the market failure of the competitive market. However, given their intrinsic, less efficient structure, the expected evolutionary path of

cooperatives is transition to a corporate form. This evolution depends on the dynamics of the market in which the cooperatives operate. The only possibility for a cooperative to remain is, in their view of these authors, the case of "chronic market failure" (Royer, 1999: 59). However, the early perception that cooperative enterprises were a "freak of nature", a temporary anachronistic solution to an economic problem that would be better solved by the market was no longer convincing. Today, they have become important organized structures, especially in some industries such as health and social care, retailing, and agriculture.

The theoretical model which best interprets the organizational structure of cooperatives is the neo-institutional approach, based mainly on institutions and institutional constraints, thus disregarding the simplistic description of firm functioning - i.e., the "black box" setting. In the neo-classical paradigm, each firm maximizes its profits, given the costs it faces and the level of the demand for its products. Some of the assumptions of this model include zero transaction costs, zero adjustment costs, full pecuniary-driven allocation and private ownership of resources. However, in the 1950s, alternative models began to emerge, to correct the deficiencies of the neo-classical approach. The attempts to generalize it passed through three steps, as stressed by Royer (1999:45): (i) the introduction of the multi-stakeholder approach, which extended utility maximization not only to the owners of firms, but also to individuals involved in them, i.e., business managers, government employees and customers; (ii) the inclusion of institutional constraints, such as the system of property rights; (iii) the introduction of transaction and adjustment costs. In order to analyze firm organization and performance, three main methods were developed: (i) the economics of transaction costs; (ii) agency theory, and (iii) property rights analysis. These are the three pillars of the "neo-institutional" model, which can be applied to study the organizational problems of cooperatives and, in particular, of CCBs. However, interesting mixing approaches also exist.

Transaction Cost

A general definition of transaction costs includes those costs, other than money prices, which a firm must pay for organization and transaction exchanges. Before any transaction, at least one of the partners involved must search for a counterpart with whom it will be possible to deal, obtain information about alternatives and opportunities, and must negotiate the terms of exchange. After agreement has been reached, other costs may be involved in monitoring other parties, in view of the incompleteness of contracts. Among the many reasons why contracts cannot be fully specified, unequal access to information between the parties is an important question. It generates the well-known problems of adverse selection and moral hazard. Incomplete contracts result in opportunistic behavior and higher transaction costs. Related to transaction costs analysis, the issue of

relationship-specific assets also arises. When a transaction involves relationship-specific assets, such as site specificity, physical assets specificity, dedicated assets and human assets, abandoning the relationship implies both direct and indirect costs- i.e., a search for alternatives. In addition, when one of the parties seeks to exploit the unbalanced relationship, due to relationship-specific assets in the post-contract period, a hold-up problem is created, which consequently increases transaction costs (Royer, 1999).

The transaction costs approach seems to be appropriate to describe the model of cooperative banks. Conventional banks base their business contracts on "hard" information, to check the creditworthiness of borrowers. However, some borrowers cannot (or do not want to) provide the information required, especially if their business is small and informal, and they will be considered as "opaque" borrowers. Cooperative banks can reduce transaction costs related to gathering of information about borrowers, since they base their lending decision not only on hard information, but integrate it with "soft" information[7]. Soft information is mainly collected through personal relationships between banking managers and costumers, mainly belonging to the local community. The bank is integrated into the community and managers can come to know borrowers personally. However, this capacity is not unique to cooperative banks, since it is related to the local dimension of small banks. Actually, cooperative banks share this characteristic with all small and local banks. What is unique to cooperative banks is the fact that this capacity is stronger for them. Cooperative banks can further reduce the costs of collecting information thanks to their ownership structure, by means of which borrowers may owners of the bank. Not only can opaque borrowers now base their creditworthiness on soft information, together with some mandatorily required hard information, but this can also help to avoid the hold-up problem, since relationship-specific assets are rebalanced by the fact that the borrower is an owner and by peer monitoring.

However, the transaction costs approach does not impose any structure on the parties taking part in the transaction. What matters is the exchange in itself; no attention is paid to who is involved in it.

Agency Theory

Unlike the transaction costs approach, agency theory imposes a hierarchical structure on the parties

[7] Petersen (2004: 5-6) defines hard and soft information on a continuum along which information can be classified. As a first characteristic, which differentiates the two types, Petersen emphasizes that, while hard information is recorded through numbers, soft information also uses text. In addition, while hard information is collected by a non-personal standardized method, soft information is collected in a more personal and tailor-made way. As a result, hard information is easier to compare and transfer, but it fails to account for non-standardized situations. In the case of soft information, the collector and the context in which the information is collected are part of the information itself. This is why soft information is not easily transferable, but it does contain a more complete set of information.

involved in the exchange. According to agency theory, the agent acts on behalf of a principal, who owns the asset. The ownership and management are separate, and compensation for the agent is conditional on the achievement of certain agreed goals. In complex organizations, the manager might decide to obtain a fixed cash flow and not bear the financial risks, while owners, who provide the capital, accept the financial risks in exchange for a "residual claim" on the manager's cash flow.

In the case of a cooperative bank, it is necessary to consider a multi-stakeholder approach. Managers act as double agents, having both members - the owner of the bank and its directors on the board as principals. In order to control managers, on one hand the board offers incentives, such as higher wages and, on the other, imposes limits on the amount of at-risk activity which managers can undertake without the approval of the board. The members also act as principals, being the owners of the cooperative bank. The "one member – one vote" does not allow for takeover strategies. The direct control tool over managers is non-approval of the balance sheet in the general assembly, which may give rise to reputation problems for the managers and affect their future careers. However, members can also act indirectly through the peer control mechanism, withdrawal of deposits, and exit from the members' group. Even non-member depositors may be included in the set of principals, as they can control managers' efforts through the threat of withdrawing their funds. Unlike what happens in other firms, the owners of Italian cooperative banks do not have residual claim rights on their shares. Their margin of profits deriving from their ownership of bank shares is connected with better financial conditions on either loans or deposits.

However, directors on the board can also be considered as agents with respect to members, on one hand, and to local society, on the other. Members delegate the power of managing the bank to directors, who are controlled through peer monitoring (since they themselves are part of the local community) and through votes in the general assembly. In addition, the local society – that is, the community resident in the CCB's area of competence - is in turn the "holder" of the public good deriving as spillover from the activities of the cooperative banks. For this reason, local society may be seen as the principal, with the board of directors as its agent. In this case, the control mechanism at work is again peer control and personal and institutional reputation. In particular, given the strength of the network in local communities and the overlap of a director's position on another board, any poor managerial skills shown while operating as a CCB director might interfere with other future institutional or political positions which require local support (see Figure A1 and A2). Also, the CCB's network controls managers and directors through the second level - i.e., Local Federations.

As Figures A1 and A2 show, one contradictory result of the agency theory approach is the double role played by some actors. In the CCB case, the board acts simultaneously as a principal

with respect to the manager and as an agent with respect to members and the local community. Managers also play a role as double agents. This personality split may be a problem when analyzing the role played by each actor and may result in contradictions.

Property Rights

Instead of simply imposing a hierarchical structure on actors, it is important to specify who is entitled to the rights deriving from ownership of assets (including the right to control and delegate powers) and who has been appointed to manage the enterprise on the behalf of the owner(s). According to the neo-classical approach, property rights are privately held and are tradeable. However, one implication of relaxing the assumption of zero transaction costs is that some rights will not be fully allocated or are not fully tradeable. In addition, alternative firm structures other than investor-owned ones will be chosen, since they provide greater utility to some groups of shareholders, according to their power. The system of property rights implies a different incentive structure, which in turn results in different "assignment and use of resources" (Royer, 1999: 51). When, as in the case of family enterprises, property rights are not privately held, but are held either publicly or mutually, as in the case of cooperatives, agency costs arise, due to the process of delegation. These costs include both the cost of monitoring managers and that of managerial opportunism. If managers have a greater margin for opportunistic behavior, they will be less likely to devote effort to minimizing costs.

With the property rights approach, cooperatives may be said to represent an efficient solution for allocating control to two or more individuals, and they represent a good system to collect dispersed financial resources[8] and provide capital for large projects/firms, although limited in scope. Cooperatives may be viewed as a way to solve some market segmentations. For example, in the credit sector, market imperfections may explain why it is reasonable and efficient to create a credit cooperative (Hansmann, 1996). When financial markets are imperfect, individuals (typically young people) without credit histories and/or new potential entrepreneurs may find it difficult to obtain loans from a bank or to issue bonds. In such cases, they may establish a cooperative, each subscribing a small fraction of equity capital. Strong fiduciary links among individuals and mutual trust may enable them to overcome asymmetric information problems in the credit sector. The same is true with opaque borrowers - i.e., SMEs.

[8] However, considering the case of CCBs, the price paid to become a member, which may be viewed as the price needed to acquire a share of the bank, is fixed by law and cannot be more than 500€. Because of the "one – head - one vote" rule, members have no incentives to own more shares. The capital collected is thus quite low.

Mixed approaches

Grossman and Hart (1986) and Hart and Moore (1990) developed an alternative model to the transaction costs approach, in which contracts are incomplete, but all the bargaining, both pre- and post-contract, are efficient. In this case, the defining characteristic of a firm is the ownership of non-human assets. The residual rights of control are those rights, which owners retain when they delegate the right to use the assets, and the right of controls and checks, which are not explicitly specified in the contract to someone else. Once the owner sells the rights of control, then ownership is transferred to a new owner. Thus, in a context in which contracts are incomplete, and individuals have different human capital various skills necessary for the production process and various types of property rights over assets are efficiently allocated to individuals who are "indispensable" in the production process and whose contribution to the firm's surplus is maximum, due to their ex-ante investments in human capital.

Hansmann (1996) integrates the property rights approach with the cost of transaction. Ownership has basically two features: it allows the owner (i) to exercise control and (ii) to receive residual earnings. The right of control implies costs related to controlling the manager (agency problem) and the cost of collective decision-making, whereas the right of owning residual earnings is related to risk-bearing (Hansmann, 1996:35). However, risk-bearing is not relevant for Italian CCBs, in view of their constraints on dividend distribution. CCBs' owners - i.e., members, try to reduce agency costs through the control mechanism, both directly and indirectly. Ownership is spread among members, who retain residual rights of control. Voting in the general assembly is the tool, which owners have to exercise their residual control rights and to avoid opportunism by both managers and directors. The costs related to the decision-making process may become substantial when the ownership is large and heterogeneous - i.e., with enlarged membership. However, costs related to inefficient decisions are greater for CCBs, because of the low level of skills in the membership, from among which directors are voted.

Most studies use either one approach or the other. The restriction to only one may result in partial conclusions. As the peculiarity of CCBs, characterized by a lending technique based on soft information, i.e., relationship lending, localism, and ownership related to the cooperative, the most appropriate approach is an integrated one.

Transaction costs and the asymmetries of information problems are mitigated by ownership. CCBs are able to simultaneously reduce both transaction costs and symmetries of information thanks to their lending technique—i.e., the relational lending. Given the local aim and the proximity

to customers, who are also owners of the bank, the loan officer is able to establish a personal relationship with borrowers and depositors. Through this personal relationship based on reciprocal trust and sharing of social networks, the loan officer collects soft information—i.e., informal information about the customers. The collection of soft information, basically for the lending relationship, is on one hand facilitated by mutual knowledge, and on the other strengthened by the customers' ownership of bank shares. Being a partner in the bank's venture, members have more incentives in avoiding free riding behaviors. Thanks to these two combined facts, CCBs have a comparative advantage, not only over the largest banks which base their business on transaction lending, but also over local commercial banks, which base their business model on relationship lending as well, but do not have members among their customers.

Opportunistic behavior by managers and directors is discouraged by the strong link with the local community of members—i.e., peer monitoring and the voting mechanism. However, assets lock and peer monitoring avoid such behavior by members. With these elements, a comprehensive approach which gathers information from the three pictures presented above should avoid the risk of being constrained by a partial view and tries to place them within a common framework, as the problem requires.

1.2 Nature of Italian Credit Cooperative Banks

Italian CCBs are by definition considered as cooperative enterprises, characterized by non-profit aims and a non-distribution constraint, given their goal to maximize "utility of members". According to Hansmann (2006), there is a clear distinction between cooperative, non-profit organizations and share companies. A pure cooperative is completely owned by its members, who have managerial power and rights over the cooperative's profits. The cooperative is thus, in itself, a for-profit enterprise and this element clearly differentiates it from a non-profit organization, in which there is no ownership and those who manage it cannot make profits out of it. However, a cooperative is different from a share company, since its ownership is a prerogative for those who deal with it - i.e., consumers and workers.

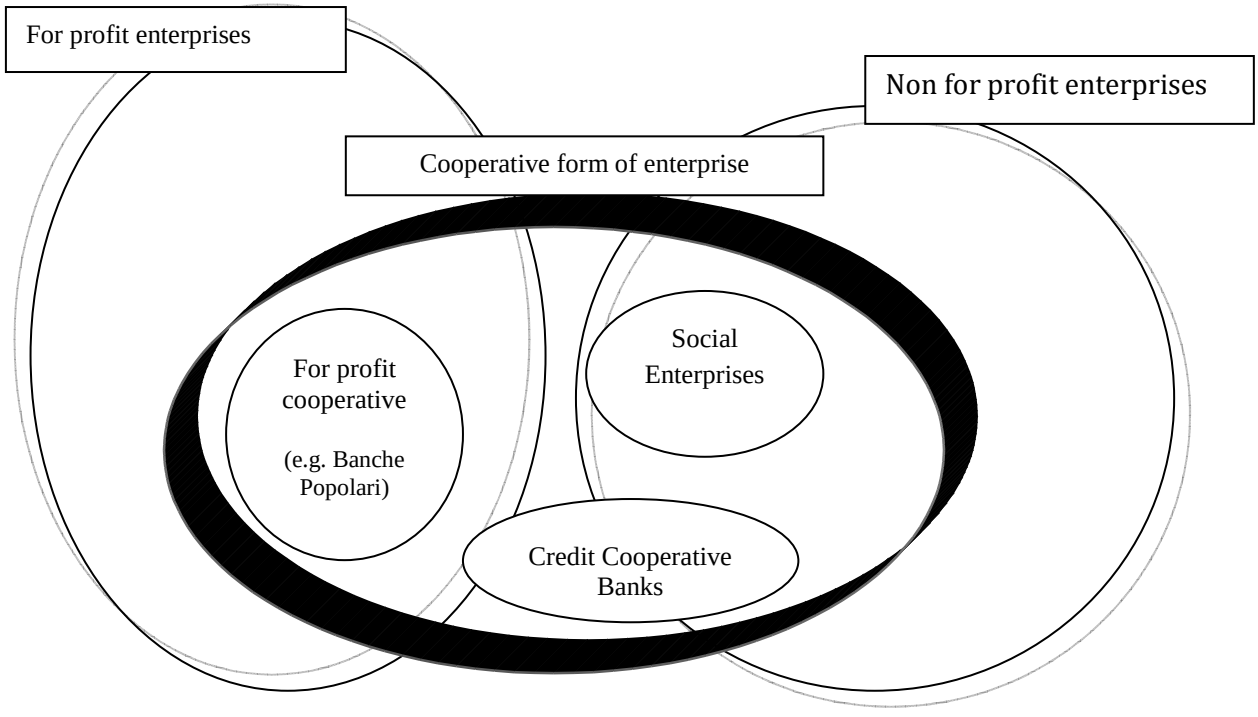
However, it is quite rare to find the pure form of cooperatives. In Italy, for instance, cooperatives are by law partially constrained as regards redistribution of dividends to members. This fact makes them closer to non-profit organizations. Although the distinction between the two does not seem clear-cut, it should be noted that cooperatives act in the market with profit-oriented aims. The profits, however, are not privately held, but are commonly collected and used as a way of reinforcing the property, mainly among members, but with some spillover to the local community.

Following the classification introduced by Borzaga and Defourny (2001), Italian CCBs may

be considered as half-way between cooperatives and non-profit organizations, that is, as a subgroup of social enterprises. With their constraints on the distribution of dividends, CCBs cannot be considered for-profit. However, working in the free market with competing commercial banks, successful CCBs collect profits and minimize costs, in order to be competitive. As shown in Figure 1, CCBs may be located between cooperatives and non-profit organizations, with a minimal overlap with the for-profit world. Cooperative banks are of two types: CCBs and Banche Popolari. There is a clear difference between the two: CCBs are constrained by the reference area and asset locks, whereas Banche Popalari are not. In addition, although they maintain a cooperative structure, Banche Popolari are motivated by profit aims, as their members receive remuneration from their ownership of shares.

Figure 1

The nature of the Italian CCBs form



Source: Adaptated from Borzaga and Defourny (2001: 22)

1.3 Conclusions

Italian CCBs may be considered as enterprises with non-profit aims, as regards the objective of their ownership. However, because they work in the market like other firms, their aim is to make profits. These earnings are not used to remunerate the residual rights of owners; instead, they increase the common assets of the bank, to be redistributed eventually to the local society in the

form of a common good. The owners do not buy shares in order to gain directly from their residual rights to earnings, but they exercise control rights, both over the management and over CCB policies of investment, and members may obtain better conditions for on CCB financial products, such as loans and deposits. Due to these features, the ownership approach seems to be the most appropriate in which to frame an analysis of CCBs. The next chapter briefly summarizes literature results concerning cooperatives, cooperative banks, and Italian CCBs.

In the following chapters, after a review of the main literature on cooperative banks, both theoretically and empirically, and presentation of some statistics regarding the differences in the growth paths of Italian CCBs, attention focuses on three important issues:

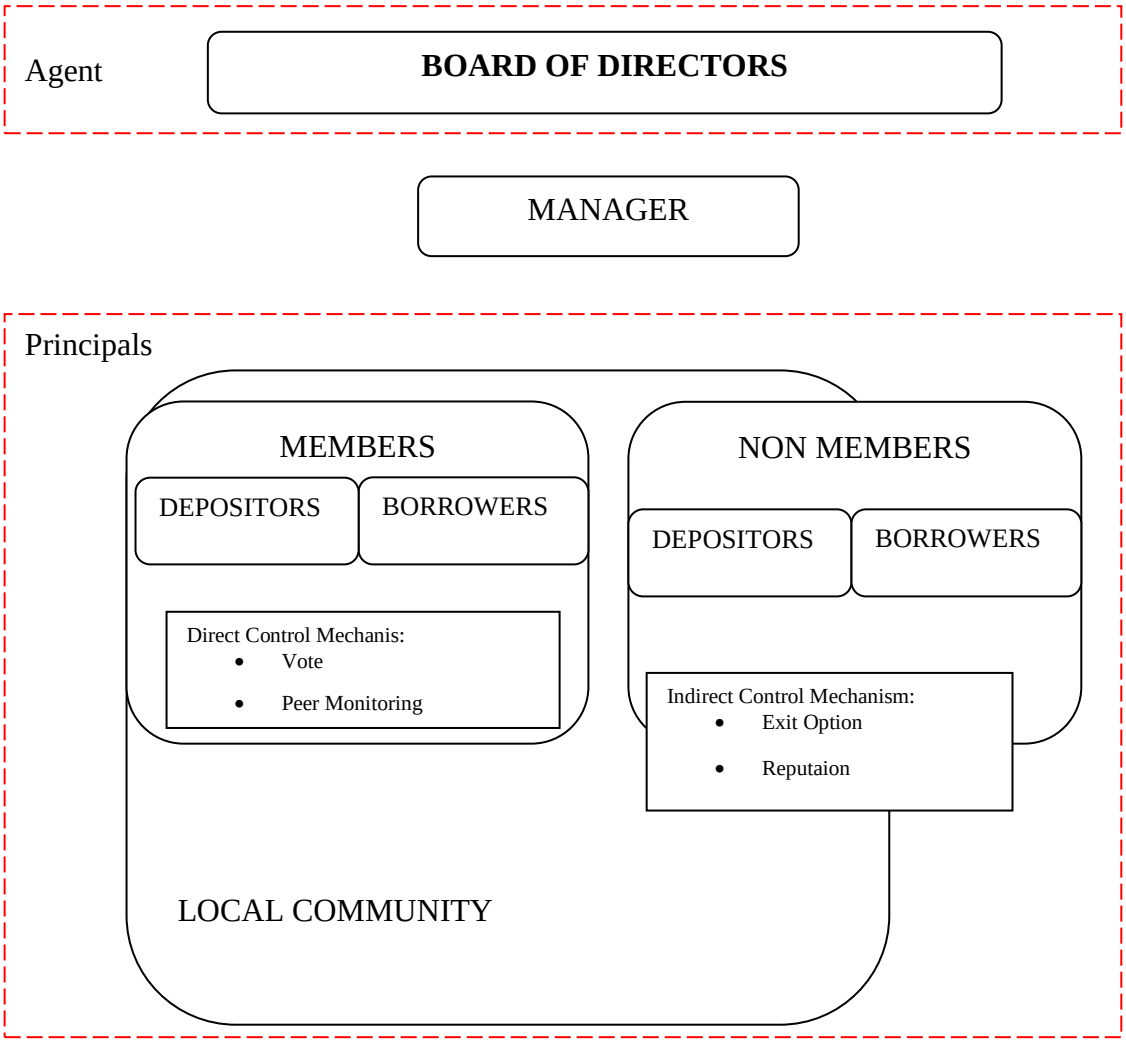
1. The features of the recent growth of CCBs;
2. The impact of social capital on the performance of CCBs;
3. The relation between governance structure and interest rate pricing as a way of rewarding members.

Lastly, some conclusions are drawn. Each chapter introduces the specific literature concerning the topic, details of the data and the theoretical frame, and results.

1.4 Appendix

Figure A 1

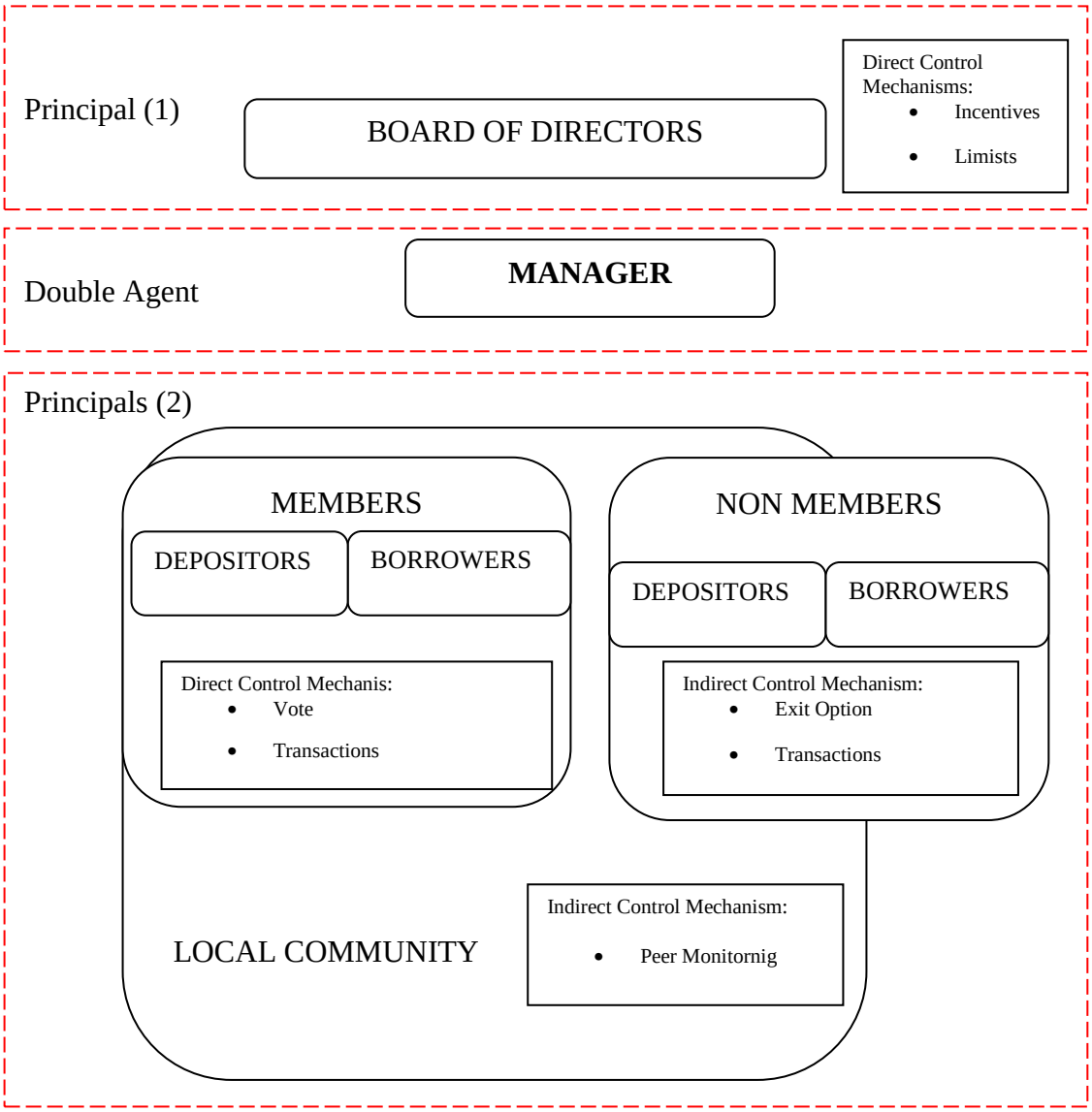
The Principal-Agent frame: the role of the board



Source: Adapted from Alexopoulus et al. (2012)

Figure A 2

The Principal-Agent frame: the role of the manager



Source: Adapted from Alexopoulus et al. (2012)

2 Literature Review

2.1 A brief overview of cooperative studies

Studies on the cooperative form of enterprises started in the nineteen century, when the first cooperatives began to spread around Europe. However, since these cooperatives had mainly workers as members, the theoretical literature developed having worker cooperatives as the main example. Walras classified cooperative firms as being somewhere between state-ownership and capitalist firms. Walras (1865) maintained that the workers in a cooperative firm, being owners of the firm too, had additional incentives compared to workers in a traditional capitalist firm. Moreover, the cooperative form of firms allowed to collect dispersed financial resources in order to establish new enterprises. The issue concerning the aim of cooperative enterprises, which remains unresolved till date, was risen by Pantaleoni (1898 and 1924). He argued that the cooperatives were not charitable institutions but they were driven by the selfish expectations by their members. According to Pantaleoni, cooperative firms showed, at least at beginning of their history, an exclusive approach: once a given size was reached, the current members excluded new memberships in order not to reduce their profit and to preserve their control capacity.

The economic literature on cooperative studies has grown alongside the development of the cooperative movement. Among the various subjects analysed, the most relevant ones pertain to the issues related to ownership and the dimensional aspects. The literature has developed both from empirical and theoretical points of view, focusing in both cases mainly on the dimensional and the ownership issues.

Focusing on the branch of the literature concerning ownership, the most discussed forms of cooperative has been, once again, the worker-owned cooperative. In terms of numbers of members, this is among the most prevalent among worldwide, together with the consumer-owned cooperatives[9]. Two opposite positions on the level of efficiency in cooperatives arise: (1) Ward (1958) according to whom cooperatives are an inefficient solution since the reduce supply and labour forces in reaction to an increase in price; and (2) Meade who sees the ownership of the firm as an incentive structure for workers.

The analysis of Ward (1958) focuses on the so-called “Illyrian firm”, a name referring to the labour-managed firms in socialist Yugoslavia. The Illyrian firm was not properly a cooperative since workers were not the owners of the assets of the firm but were entitled of the usufruct. The group of workers organised teams to produce a given product or service. This firm did not have a

[9] Considering the value created, worker cooperatives are less prominent, while other type of cooperatives, such as the agriculture one are more relevant

true internal hierarchy and was self-managed following a democratic principle: one man, one vote. According to Ward, these firms maximised the average income of each worker, and not the average income of the enterprises. They competed in the market similarly to profit enterprises. However, the Illyrian firm would have responded to an increase in price with a reduction of the supply and of the labour force as well, in order to increase the income of each worker, which determines the inefficiency of this model.

Meade concentrates his attention on the individual contribution to production in a firm based on teamwork. The underlying idea is that a direct participation of the workers in the ownership of firms[10] would have a positive impact on their incentive to work (Meade (1986 and 1989)). In a labour-managed cooperative, the workers hold the entire capital of the firm. This kind of firm is efficient. However, this efficient is related with the firm's size: if the number of worker-owners is not very large, then there are sufficient incentives and possibilities to monitor each other's contribution to the common work. But when the number of worker-owners becomes very large, the problem of free riders will arise.

An intermediate position in this discussion concerning the relationship between ownership and efficiency is the one of Turati. On the one hand, quoting Drèze (1976), Turati (2004) finds that the ownership of enterprises, where ownership is defined as "the class of stakeholders to whom firms' property rights are assigned", does not have any impact on the economic efficiency of the firm. On the other hand, Turati argues, "different organisations represent different incentive structures". This second approach mainly refers to Hansmann (1988, 1996) and Holmstrom and Milgrom, (1994), for whom the ownership structure of firms does influence the cost of market contracting by reducing the transaction costs. Given the differences in the "contract" offered to each class of members, the transaction costs will be different. Consequently, the firm will have different levels of economic efficiency. Furthermore, when workers or customers are the owners of the firm, the ownership structure is used as one of the ways to provide incentives to different stakeholders (Turati, 2004). The ownership of the firm, in the absence of specific legal provisions that limit the choice, should be assigned to the class of stakeholders that minimises the social transaction costs (Turati, 2004). The theoretical assumption is supported by empirical findings that underline how different organisations devise different incentive structures.

The ownership issue is intimately related with the efficiency of a firm and with its

[10] The definition that Meade (1972: 402) gives of cooperatives, similarly to Ward (1958) is of a "system in which workers get together and form collectives or partnerships to run firms; they hire capital and purchase other inputs and they sell the products of the firm at the best prices they can obtain in the markets for inputs and outputs; they themselves bear the risk of any unexpected gain or loss and distribute the resulting surplus among themselves, all workers of any one given grade or skill receiving an equal share of the surplus; their basic objective is assumed to be to maximise the return per worker."

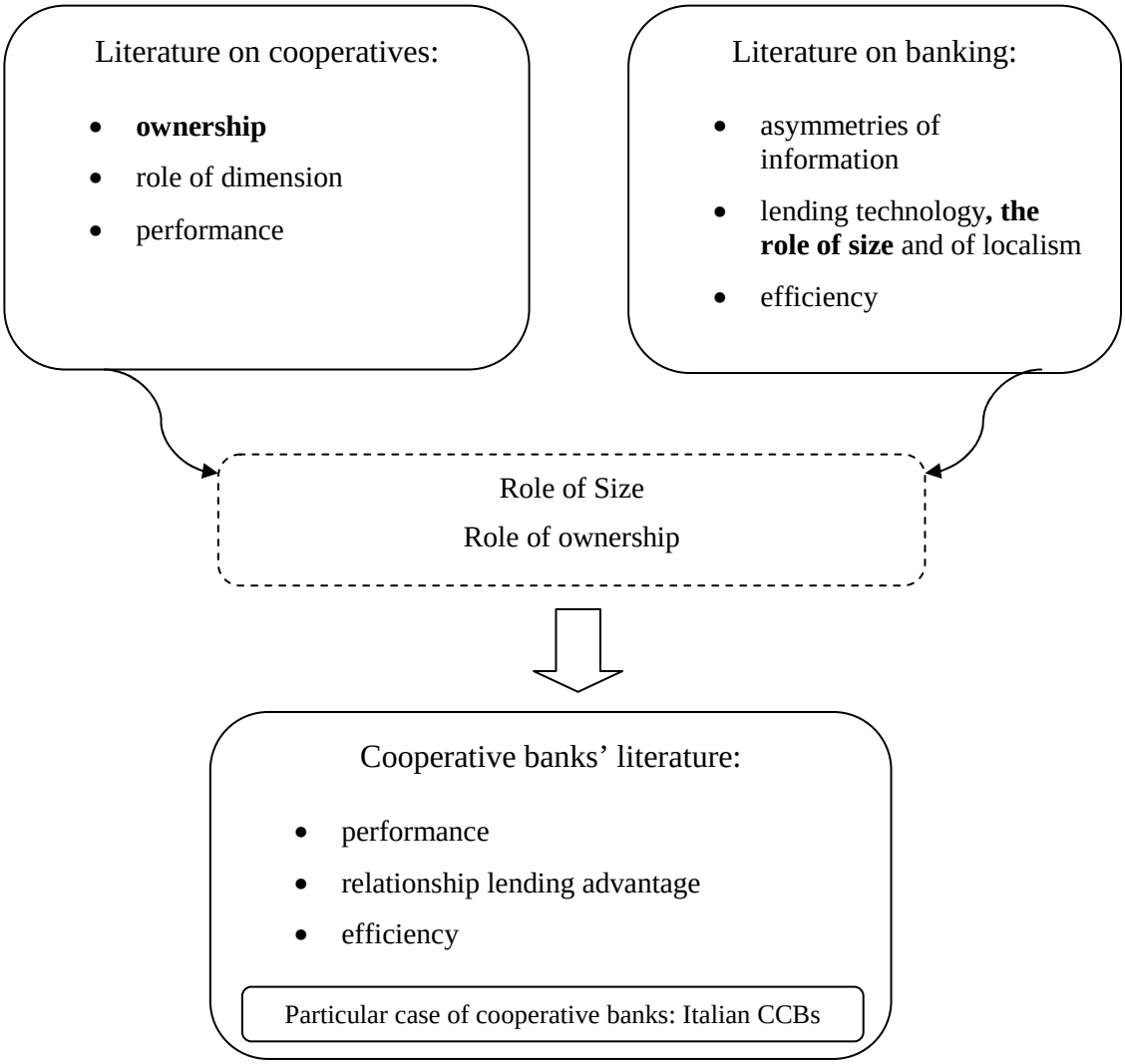
dimensions. From a theoretical point of view, size matters. Birchall and Simmons (2004: 489) underline that size becomes an issue when cooperative organisations tend to loose touch with their members. Moreover, the mobilisation of individuals is far more difficult in larger organisations than in smaller groups. This factor is crucial in the case of a cooperative, where members have to work together to achieve a common goal. As Olson (1965) argues, similarly to Pantaleoni view, individuals have less incentive to contribute in larger groups since the larger the group; the lower is the value of the collective good's unit that each member receives. Moreover, a larger group requires more co-ordination and higher monitoring costs. At the same time, the weakening of democratic control by the general assembly on management may lead the management to pursue an opportunistic behaviour.

2.2 The cooperative banks

The literature on cooperative banks is spread among different areas of research and therefore it is not easy to outline it as one coherent body of literature. The main reason is due to the fact that the subject under investigation is composed of two different aims: the cooperative and the banking. Figure 2 attempts to map how cooperative banks, and in particular Italian CCBs, have been framed in the broader literature concerning cooperatives and banks. Here, the focus is on the most analysed issues on cooperative bank—i.e. performance, lending technologies based on relationship lending and efficiency—that have been related with either the size of cooperative banks or their ownership structure. The contributions on ownership structure are mainly derived from the literature on cooperatives, while the role of size, even though not exclusive, comes from the literature on banking. In the review that follows, ownership and size are used as filters to classify the studies on three main topics: cooperative banks' performance, cooperative banks' comparative advantages and cooperative banks' efficiency both at the theoretical and empirical level.

Figure 2

A frame to investigate cooperative banks' literature



2.3 The cooperative banks: Theoretical Literature

The theoretical background concerning cooperative banks model mainly reviews the principal-agent problem. It focuses on the ability of small banks (among which cooperative banks) to reduce the asymmetry of information due to their capacity to collect soft information and to lend on a relational basis. Thus, the reduction of symmetries is related to both the small and local dimension of cooperative banks and their ownership structure.

The early studies on relationship banking by Hodgman (1961) concentrate on small size banks. He underlines how small banks offered better interest rates as a strategy to attract deposits. Along the same lines, Wood (1975) studied how the interest rates could become a way to acquire customers. Alternatively, Kane and Malkiel (1965) focus more on the informational advantages that

banks could exploit in lending. Only from the late 70s, the relationship between banks and clients has been explicitly framed as an asymmetric information problem. As discussed by Leland and Pyle (1977), Diamond (1984) and Fama (1985), the collection of private information allows the bank to lend also to opaque borrowers, who otherwise could not receive loans. Recently, as mentioned in the contribution by Berger and Udell (2002), the relational lending has been recognised as an alternative lending technology, different from the transactional lending, based on hard information.

Hansmann (1996) follows a different approach and does not focus on dimension per se as an advantage. He considers the ownership structure as the main element that reinforces the relationship lending. Unlike other small and local banks, the cooperative banks are the only ones that are owned by their members. When the bank has a cooperative structure, the advantages of relationship lending are larger. The fact that the borrowers are also owners should reduce the risk related to the lending activity. However, Hansmann does not disregard the size factor completely. He argues that the governance of cooperative banks becomes less stable as the number of members increases. In that case, the one-head one-vote rule can lead to higher management costs of control (Mosetti and Santella, 2000).

A second enforcing mechanism consistent with the ownership structure approach is the peer monitoring (Stiglitz, 1990). The peer monitoring is a control tool based on social sanctions for which borrowers are encouraged to pay back the loan by the social pressure of other members of the banks (Angelini et al., 1998; Banerjee et al., 1994; Hesse and Cihak, 2007). More in general, peer monitoring avoids free riding through social controls. According to Decressin (2008), more than to address market failure and credit rationing, cooperative banks are an optimal incentive structure for lending activity based on “soft” information thanks to their ownership structure (Turati, 2004).

The features describe above permit to cooperative banks to have a higher stability compared to commercial banks. This is mainly due to a much lower volatility of the cooperative banks’ returns, which more than offsets their relatively lower profitability and capitalization. In normal cooperative banks pass on most of their returns to costumers, that will be easily in weaker periods. Furthermore, the financial system as a whole benefits in terms of stability from a higher presence of cooperative banks (Hesse and Cihak, 2007).

The literature on cooperative banks have underlined however the limits of these banks. In particular two are the most relevant problems: on the one side moral hard problems, on the other side the governance structure inadequacy. The collection of information can determine the hold-up and the capturing of the borrowers by the bank. In a credit relationship, the bank can be exposed to post-contractual moral hazard issue when the project that the bank is financing may need an injection of funding which was non-contractible ex-ante. The bank can threaten to withhold the new

loans and force a renegotiation of the contracts. As Maria Herrera and Minetti (2007) underline, this problem is more severe when the bank is not replaceable by an alternative financier. This is often the case of opaque borrowers that mainly receive loans from cooperative banks. Moreover, the higher is information advantage that a bank has over competing financier, the lower is for the opaque borrowers the substitutability of the bank and the higher is the rents that the bank can extract (Rajan, 1992). The borrowers are in this case "informational captured" by the banks (Alessandrini et al., 2002).

The second hot issue for cooperative banks is the inadequacy of their governance structure which has not developed according to their increases in size, in the members' spread over, an in the complexity of the banking industry. As Visco (2012) has underlined, the advantages given by the more flexible and the closer to customers bank have been weaken by the poor managerial structure and by the ineffective managerial procedures of cooperative banks (at least in the Italian case). In general, the risks that cooperative banks may face given their governance relate with the use of their endowment for purposes that differ from the members' best interest—i.e. empire building and appropriation (Fonteyne, 2007).

2.4 The cooperative banks: Empirical Literature

As with the theoretical literature, the empirical studies on cooperative banks are highly interlinked with the studies on small banks. As mentioned earlier, some of the characteristics are common to both types of banks. In particular, the empirical literature has investigated the role of small banks and their performance in the evolving banking environment. One strand of these studies is more linked with the theoretical literature and has focused on the comparative advantages of small banks compared to other banks (Colle, 1998; Boot, 2000; Berger and Udell, 2002). A large number of studies has analysed the link between small banks and firms, especially the link with SMEs. According to their conclusion, small banks play an important role in the economic development of an area (Petersen and Rajan, 1995; Berger et al., 1999; DeYoung et al., 1999; Bonaccorsi di Patti and Gobbi, 2001). Regarding the local banks, the results show how these banks can benefit from the advantages in reducing the lending risks. These advantages are due to their proximity to customers and the proximity between those who collect information and those who use them to decide for lending (Angelini et al., 1998; DeYoung et al., 2003; Scott, 2004; Bongini et al., 2007; Alessandrini and Zazzaro, 2008). Focusing on cooperative banks, one observes that they are affected by the size problem like other cooperative organisations. The enlargement of their size reduces members' mobilisation and favours free-riding behaviour (Birchall and Simmons, 2004).

The literature focusing on the U.S. credit market has shown that proximity, better

relationship with employees, consultancy services, market concentration, and interest rate spread together with relationship lending are good predictors of the growth of small banks (Basset and Brandy, 2002). DeYoung and Hunter (2002) have studied the strengths and weaknesses of the community banks compared to large banks, especially after the introduction of new technologies to sell financial services — i.e., internet banking. The authors have drawn a "strategic map" to forecast the performance of community banks in the new banking industry as it has emerged from the consolidation process. They have concluded that the survival of community banks depends negatively on "the ability of large banks to increase the personalization and customization of their services" (p.122). Large banks present the same main challenge also faced by community banks in terms of both cost advantages and lending strategy. However, well-managed community banks can outperform large banks and thus guarantee their own survival. Finally, De Young et al. (2003:85) developed a theoretical frame to analyse the changes related to deregulation, advancements in technology and increases in competitive rivalry that affected U.S. community banks. Their findings suggest that the regulatory and technological changes have increased the competition, but at the same time they have also underlined how well managed community banks have a potentially exploitable strategic position within the industry.

The efficiency issue

A very well developed strand of literature analyses the links between banks size and their efficiency. Focusing on the banking industry, efficiency is not only linked with profitability and competitiveness, but it is also affected by the provision of low risk, financial intermediation (Berger et al., 1993; Pittaluga et al., 2005). One way to approach the bank's efficiency studies is the scale and scope analysis (Berger et al., 1987; McAllister and McManus, 1993). The main results concerning cooperative banks show that these banks need to control their cost efficiency level in order to be profitable, where profitability is measured by the average return on average equity (O'Brein and Wagenvoort, 2000). A second tool is the X-efficiency analysis—i.e. the distance between each bank's efficiency level and the efficient frontier. As Worthington (1999) points out, there is a gap in the literature when it comes to X-efficiency as a measure of efficiency. This measure ascribes a crucial role to the bank management in charge of controlling costs or maximising revenues (Berger et al., 1993). However, academics who have analysed the efficiency of cooperative banks have focused mainly on the U.S. and the U.K., while other countries have received less attention (Berger and Humphrey, 1997; Worthington, 1999).

While size has been extensively investigated as an element that affects efficiency, relatively less attention has been paid to the role played by the ownership structure on efficiency. Among those

who have investigated this issue, Sapienza (2004) has concentrated on the government ownership of lending banks. She had studied the interest-rate policies of Italian state-owned banks versus those that were privately owned. Her results state that the state-owned banks charge lower interest rates compared to the privately owned banks to same size firms. Iannotta et al. (2007) have followed a similar approach in comparing the performance of European banking grouped according to bank's governance structure and they found similar results. Kumbhakar and Sarkar (2003) have examined the deregulation of the Indian banking market and the effects of it on the productivity, finding opposite results to those of Sapienza (2004). Even though these papers do not focus on CCBs, they are relevant to CCBs literature because of their attempts to link the efficiency and the performance of banks with their (government) ownership structure and not with their dimension. They support the idea that ownership matters.

The Italian case

The empirical literature on the Italian case has largely focused on the determinants of the growth of small banks. In Italy, evidences concerning the last fifteen years have shown that the small banks have not only experienced unexpected growth, but also have managed to expand their business more rapidly than their larger competitors. Two main reasons have been offered to explain this phenomenon: (i) the re-organisation problems faced by larger banking groups (following merger and acquisitions, hereafter M&A). These banks could have disregarded certain categories of customers such as small borrowers (households and SMEs), due to their focus on organisational issues, thus leaving room for small banks growth (at least for a certain period of time); (ii) the business model of small banks, based on the relationship lending, could have been more effective than the lending technology of large banks.

Bonaccorsi di Patti et al. (2005) found that the re-organisation process of large banks that started after the liberalisation helps in explaining the growth of Italian small banks in the period between 1996 and 2003 more than other possible causes (such as sector and geographical specialisation, better liquidity and capitalisation indexes, and the possible changes in price policies). These findings do not exclude that the positive performance of small banks could have been the result of a transitory phenomenon that should have ceased after the restructuring of large banks was completed. Further studies by Bongini et al. (2007) have partially challenged these interpretations: analysing data from 1998 to 2004, this study claims that small banks have grown mostly because of their comparative advantage, namely localism and relationship lending.

Among Italian small banks, cooperative banks represent the largest share. Cooperative banks, both CCBs and Banche Popolari, benefit from their local aim to better solve the asymmetries

of information and from their democratic principle to make takeover unlikely (Pittaluga et al., 2005). However, the two types of cooperative institutes show different features. Unlikely CCBs, in the period after the liberalisation, Banche Popolari have concentrated on external growth through a wave of merger and acquisition both within and outside their category of banks. The final result has been a formation of medium and large group of Banche Popolari (Tarantola, 2009). Empirical evidences show that the increase in size of Banche Popolari over a given threshold allowed them to show higher level of efficiency. In this sense, Banche Popolari are seen in same cases closer to stock companies than to cooperative banks. However, thanks to their cooperative ownership, Banche Popolari do not face the imbalances between control power and cash-flow power that can occur in stock companies (Pittaluga et al., 2005).

CCBs have focused more on consolidating their position in the local market, concentrating their effort on the internal growth (Tarantola, 2009). In particular, most of the empirical researches have studied the impact of CCB's presence on the local development and their privileged link with SMEs (Petersen and Rajan, 1994; Lucchetti et al., 2001; Goglio, 2007; Zurdo and Palacio, 2008). CCBs have a crucial impact on the local development where the banking network is denser, in the Centre-North-East (Goglio, 2007). Their contribution in terms of the liquidity supplied, has been extensive to the development of SMEs (Alessandrini and Zazzaro, 2001; Alessandrini et al., 2003; Goglio, 2007).

Moreover, a branch of the literature on the Italian case has focused on the consequences of the liberalisation process that started at the beginning of the 1990s. In comparing three types of credit institutions (commercial, savings and mortgage) among different European countries during the five years after liberalisation, O' Brien and Wagenvoort (2000) found that Italian CCBs are among the most efficient.

Empirical studies on Italian CCBs that concentrated on the period from the late 90s till the first years of the 2000s found that the CCBs are more cost-efficient than Italian commercial banks, their solvency ratio is higher compared to the whole system and their non-performing loans ratio is similar to the banking industry as a whole (Ferri et al., 2001; Turati, 2004; Guitiérrez, 2008). In particular, CCBs challenge the inverse relationship based on the economies of scale argument between increases in size and reductions of costs that leads to gains in efficiency (Mosetti and Santella, 2000). Finally, a different study concerning CCB's cost efficiency underlines the importance for Italian banks to control labour cost (Girardone et al., 2004).

The corporate governance literature

Another branch in the empirical literature analyses cooperative banks from the corporate

governance perspective (De Bonis et al., 1994; Mosetti and Santella, 2000; Di Salvo and Schraffl, 2002; Davis, 2005). For the Italian case, a large literature exists for Banche Popolari and detailed studies are available about their loan risk and allocation's efficiency (Cau et al., 2005), their growth and role in local economies (Ferri et al, 2005), and their governance structure (Pittaluga et al., 2005). Bongini and Ferri (2007) have analysed two governance-related issues for Banche Popolari: (i) the relationship between the lower profit volatility and either the stability of the governance or the level of income diversification; (ii) the governance issue related with the fast growing path of Banche Popolari Groups. According to their findings, thanks to the stability of their board of directors, Banche Popolari show a lower profit volatility. Moreover, the most fast growing among them exhibit performance no worse the than less dynamic Banche Popolari, confirming that it is not necessary to transform these banks in joint stock banks to improve their performance.

Despite its importance for the performance of CCBs, their governance structure has received less attention in the academic literature. The corporate governance mechanism of CCBs is adequate if it responds properly to the market stimulus. Studying the evolutionary model of Italian local banks through their institutional and economic characteristics, Ferri et al. (2001) found that the governance model of CCBs and Banche Popolari has performed better than the saving banks in addressing the local needs. On the contrary, the impact of corporate governance on bank's performance has also been fairly well studied (Mosetti and Santella, 2000; Nardozzi, 2001; Ferri et al., 2001; Pittaluga et al., 2005). The absence of takeover threat, due to the "one-head one-vote" rule in cooperative banks, prevents the managers from following a short-termism[11] strategy (Pittaluga et al., 2005) and at the same time it reduces the managerial turnover. Lower turnover is an advantage when the bank is performing well because it guarantees continuity. But it can be harmful when the performance is ineffective because it constrains the board's ability to appoint a better manager (Ferri et al., 2001).

2.5 Conclusion

According to the literature review presented both theoretical and empirical, and in contrast to what some authors forecasted, the Italian CCBs have not only survived the consolidation process but have also grown, especially in the period from 1995 to 2004. Their growth seems to be based on the comparative advantages that these banks shared with small banks—i.e., relationship lending, flexibility, and proximity. Moreover, their peculiar ownership structure has played a crucial role in reducing the asymmetry of information concerning the risky profile of the borrower. However,

[11] Short-termism refers to the phenomenon of "denying long term loans for investments with delayed returns" (Pittaluga et al., 2005: 1).

some questions are still open: How did CCBs perform after 2004, year in which many of the articles concerning CCBs performance studies stop? Did all Italian CCBs grow in the same way? What are the elements that have impacted their growth? How did CCBs behave during the financial crises that started in 2007?

The following three chapters, chapter 3, 4 and 5, aim to provide answers to these above questions. Chapter 6, instead, focuses on the particular role of social capital on CCBs performance; while chapter 7 is intended to deepen the understanding concerning corporate governance issues that are related with the ownership rights of members. Chapter 8 gives some final remarks.

3 The credit cooperative banks in Italy

The banking industry in Italy has experienced significant changes since the 1990s, when the liberalisation reforms at the European and national levels eased legal constraints and made the banking industry more competitive. In particular, two reforms have been pivotal: the relaxation of restrictions on the opening of new branches and on credit specialization (Guiso et al., 2004). Inside the Italian banking industry, CCBs represent successful story, especially after the liberalization. Until the 1980s, CCBs were still strongly linked with agriculture, declining and state-subsidized industry. Moreover, given their limited lending activity they were considered as half-banks, able only to collect deposits. CCBs were considered a form of banking mainly related to the past that would have disappeared as soon as the liberalization rules would have been put in place. The process of liberalization posed challenges the survival of CCBs, by allowing the extension of their membership from "mono-group members" (only farmers and handcrafts) to "multiple-group members". The weakening of the geographical limitations through the relaxation of constraints on the opening of new branches has increased the competition with commercial banks and has enlarged the reference area of CCBs.

The expected disappearance of this form of banking from the market has not occurred and, on the contrary, the new rules contributed to their "renaissance". In general, the main results of the liberalization on the Italian banking industry have been an increasing number of acquisitions and mergers, which have led to a reduction in the number of intermediaries and an enlargement in the size of institutions (Draghi, 2009). Banks have been forced to increasingly focus on performance, particularly on the costs and revenues (Girardone et al., 2004). CCBs were involved in a intra-group M&A wave, which caused a sensible reduction in the number of CCBs on the one hand, and a deepening of their branches network on the other. Moreover, despite having a not-for-profit aim, the CCBs have almost tripled their market share from 1992 to 2009.

The aim of this chapter is to describe the model of Italian CCBs, which has emerged after the liberalization of the 90s and the new Banking Law of 1993. At first, the Italian banking system will be described in order to frame the environment in which CCBs work; a brief historical overview will focus attention on the most relevant events concerning the evolution of CCBs and the development of their networks. Finally, some figures on CCBs will be presented in order to describe CCBs' performance.

3.1 Credit cooperative banks in the Italian context

According to the Bank of Italy's official classification, Italian banks can be divided into four institutional forms: (i) *banche spa* (limited company banks); (ii) *banche popolari*; (iii) *banche di*

credito cooperativo (credit cooperative banks, also called mutual banks) and (iv) *filiali di banche estere* (branches of foreign banks). There are therefore two categories of banks that can be considered "cooperative".

Banche popolari are cooperative banks according to the Banking Law and they share some characteristics with CCBs. Their main common features are: the ownership of members, the "one-head one-vote" principle, the constraint on the maximum amount of shares that each member can hold, the compulsory net profit destination to legal reserves higher than ones of ordinary banks (but much lower than the one of CCBs), the variability of capital. However, they are not subject to "mutuality requirements" (Table 1). Moreover, they do not have to devote a part of their profits to Mutual Funds. In contrast to CCBs, their assets are not "locked" and they can be distributed to the members in case of bank's liquidation. Banche Popolari are not subject to any restrictions whether they intend to transform into limited companies. Given this possibility, they cannot be considered "mutualistic" from a substantial point of view[12].

Table 1

Comparison between CCBs and Banche Popolari

		Banche Popolari	***Credit Cooperative Banks***
Minimum required capital		6.3 million of euros	2 million of euros
Nominal shares value		2 euros	From 25 to 50 euros
Members	Requirements	-	To reside, to have the headquarter or to operate with continuity in the competence area of the CCB.
	Minimum number	200	200
Limits to the ownership		0.5 per cent*	50,000 Euros (nominal value)
Profits' allocation		10 per cent to legal reserve. Remainder: - legal reserve - other reserves - other allocations either Statutory-based or not - charity or assistance's purposes - dividends to shareholders	70 per cent to legal reserve; 3 per cent to Mutual funds for the promotion and development of the cooperation. Remainder: - shares' revaluation - other reserves or funds - dividends to shareholders** - charity/mutuality
Voting mechanism		One-head one-vote	One-head one-vote
Geographical limits		-	Competence area: it includes the municipalities in which the CCB has either its head office or its branches and neighboring ones in order to guarantee territorial contiguity.
Mutualistic requirement		-	At least 50 per cent of total risky assets must be addressed to either

[12] Given these differences and the fact that Banche Popolari are not subject to mutuality requirements, the attention of this essay will be focus on credit cooperative banks only.

		loans to members or to Treasury Bonds (or other assets with a weighted coefficient equal to zero according to Basel rules).
Merger constraints	-	Mergers implying the transformation of a CCB into an other type of bank must be authorized by the Bank of Italy and have to be justified only by "creditors' interests" or "stability reasons".
Assets locked	No	Yes

* The limit does not apply to undertakings by Institutional investors.

** By law the rate of dividends cannot exceed the returns on postal savings, increased by 2.5 per cent. The Statute sets the actual value of the maximum remuneration of the securities offered to shareholders.

Source: Adapted from Stefani, 2010

At the end of 2011, the Italian banking industry counted 760 banks (233 limited liability banks; 37 Banche Popolari, 415 credit cooperative banks and 75 branches of foreign banks) (Bank of Italy, 2012). As underlined above, in the last decade, the merging and acquisition process has substantially contributed in reducing the number of intermediaries on the on hand, and in increasing the concentration of the industry[13], on the other hand. However, the concentration of the credit market at the local level has constantly reduced thanks to the expansion of traditional banking intermediaries outside their markets—i.e., moving to insurance and similar financial products—and thanks to the growth in size of the smaller banks.

A second classification often used is based on the bank's size. According to current Bank of Italy official classification, small Italian banks are defined as banks whose mean total assets are less than 9 billion euro (Bank of Italy, 2007). From an institutional point of view, they constitute a heterogeneous group composed mainly by CCBs and Banche Popolari, even though it is possible to find some examples of commercial banks, as well. The two largest groups per size (UniCredit and Intesa Sanpaolo) in 2011 have accounted for the 31.1 per cent of the whole Italian credit market; the other three groups of medium-large size (Banca Monte dei Paschi di Siena, Banco Popolare e Unione di Banche Italiane) have reached a share equal to 17.8 per cent. The third category, which included medium-small banks—i.e. specialized banks and branches of foreign banks, hold a market share equal to 40.4 per cent. The remaining 10.7 per cent has to be attributed to the activity of 563 small banks mainly working at a local level, among which the most numerous group is the CCBs' one (Bank of Italy, 2011).

Italian CCBs are subject to the same banking legislation and supervisory regulation as the other banks, with some additional restrictions. The Civil Code provisions on cooperatives apply to CCBs only when they complement the banking legislation or when not in conflict with it. In other

[13] The Herfinadahl-Hirschman index has increased from 0.60 to 0.76 from 2000 to 2009.

words, at least from a legislative point of view, CCBs are firstly banks, and secondly cooperatives. Differently from other banks, their statute plays a crucial role, since it translates into internal rules the supervisory regulation of the Bank of Italy.

Italian CCBs are fully independent banks[14], even though they are connected to each other, on a voluntary basis, through an association, Federcasse, and a network aimed to provide them financial products. First, CCBs are organised into 15 local Federations that are, in their turn, affiliated to the national Federation ("Federcasse"). The Federations provide non-financial services. However, the extend of these services vary amongst Federations. Almost all Federations provide internal audit, compliance and anti-money laundering services, while only a few have extended their offers to governance and strategy orientation issues (Tarantola, 2011). Moreover they provide to CCBs information technology systems. Second, the network supplying financial products is organized in two levels: the single CCB which keeps and runs the relations with their customers and the three Central cooperative banks[15] that support single CCBs with a range of financial services. These could not be otherwise supplied (or it would not be economic to produce) by single CCBs, given their small scale. Such services include the payment system services, the financial and insurance products provision, the portfolio management, the securitization, the in-pool operations, the leasing and factoring.

CCBs adhere, on a compulsory basis to the "Fondo di garanzia dei depositanti del credito cooperativo" (Deposit Guarantee for Cooperative Banks), set in 1997, following the European directive n. 19/1994, as a parallel system to the one established for commercial banks, called "Fondo di garanzia dei depositanti" (Deposit Guarantee). Moreover the CCBs system has set its own "Fondo di garanzia degli obbligazionisti" (Bonholder Guarantee Fund for the Credit Cooperative Banks) that intervenes in case of default by an issuer of bonds. In December 2011 the Bank of Italy approved the statute of a "Fondo di garanzia istituzionale" (Institutional Guarantee Fund) for CCBs, a guarantees system which operational details have to be defined.

3.1 An historical perspective on Italian credit cooperative banks

The first cooperative wave in Italy took place in the second half of the nineteenth century and was mainly inspired by liberal thought. The cooperative form was implemented in order to organize both consumers' and producers' enterprises, especially in reaction to the agrarian crisis of the 1882-

[14] A minimum capital of 2 million euro is required to establish a new independent CCB.

[15] The three Central Cooperative Banks are ICCREA (whose headquarter is in Rome; see footnote 16), Cassa Centrale Banca – Credito Cooperativo del Nord Est (whose headquarter is in Trento) and Cassa centrale Raiffeisen dell'Alto Adige (established in Bolzano). All three are limited companies, which offer financial services to CCBs, directly or, in the case of ICCREA and Cassa Centrale Banca, through companies of their groups. The Central Banks of Trento and of Bolzano participate in ICCREA.

83. Following the model introduced by Friedrich W.Raiffeisen in Rheinland, the first "Cassa Rurale" (Rural Bank, hereafter RB) was established by Leone Wollemborg, together with 32 members in a rural area close to Padua (Loreggia) in 1883. In the following year, two RBs were established: one in Cambiano di Castelfiorentino (Florence) and one in Trebaseleghe (Padua). In 1890, Don Luigi Cerutti - a young priest, founded the first Catholic RB in Gambarare (Venice). The RBs were closely linked to the local community since they hinged on ethical and solidarity principles. Italian RBs differed from the German Raiffeisen mainly due to the fact that the dividends were not redistributed to members, but kept on behalf of the local community. In 1888, 51 RBs joined the "Federation of Rural Banks and Similar Enterprises"(FRBs).

Parallel to the development of RBs, consumer and agriculture cooperatives also expanded in Italy. In 1891, the "Italian League of Cooperative and Mutual Companies" was established as a second level body with the aim of coordinating among all type of cooperatives both vertically (that is at the sector level) and horizontally (at the geographical level). Unlike the FRBs, the League promoted the empowerment of the entire cooperative movement, not only of RBs.

With his Encyclical Rerum Novarum (1892), Pope Leo XIII underlined the need to fight against what he called the *usura vorax* (the "devourer wear"), through social action and solidarity. After the encyclical, the involvement of the clergy in the process of development of RBs resulted in the spread of RBs all over Italy (Zamagni, 2006).

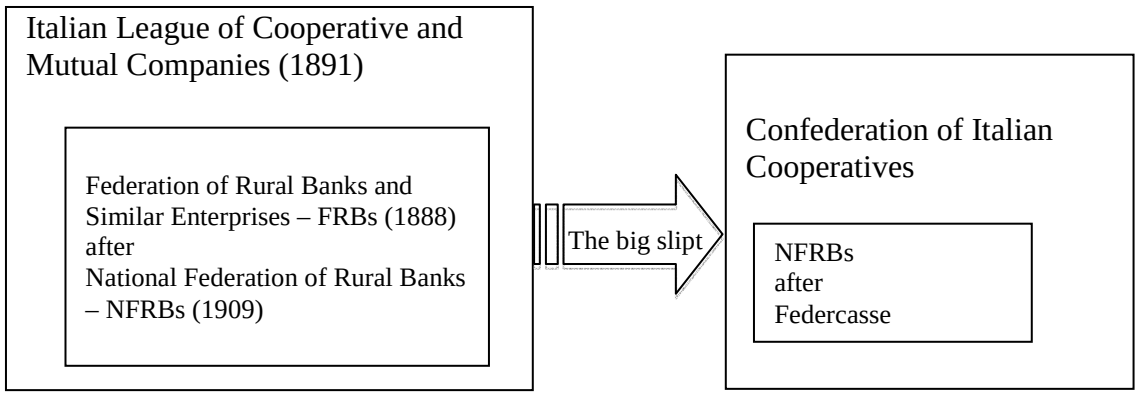
At the end of the nineteen century, in Italy there were almost 900 RBs, 775 of which were of Catholic inspiration. Most the RBs were established in the North East (in Lombardy and Piedmont) and in Rome. In the South only the Sicilian provinces of Agrigento and Catania compared with the North in terms of RBs diffusion. The expansion of RBs in these two provinces was largely due to the efforts of Don Luigi Sturzo. Even though those banks were spread over in the country, their development was affected both by their poor assets and by the small volume of their business. In 1917 the "National Federation of Rural Banks"(NFRBs), established in 1909 as an evolution of the FRBs at the national level and supported by the Catholic movement, emerged as the promoter and supporter of the movement of RBs. In order to be more effective, it structured RBs into local federations. The NFRBs can be considered as the predecessor of Federcasse.

After the First World War, RBs were challenged by the liquidity shortage of both peasantries and Federation bodies. The structural limits of the cooperative financial industry surfaced when Italy has to face both economic and social problems, such as high inflation, unemployment, weakening of the liberal government, and internal divisions (Zamagni, 2006). In this context, two contrasting views emerged in the cooperative movement as an outcome of a clash at the political level. From the one hand, the Christian-social vision supporting the establishment of

a Christian-social order and, from the other, the socialist view that considered cooperation as a tool for the collectivization of the means of production and of the consequent wealth. The cooperatives linked with the Catholic movement decided to exit from the League that was largely socialist-inspired and to create the Confederation of Italian Cooperatives (the "big split"). The Confederation aimed to include all types of cooperatives linked to the catholic movement, as a parallel body to the League. The NFRBs also joined the new Confederation exiting the League (see Figure 3) (Federcasse, 2012).

Figure 3

Italian cooperative movement at the end of World War 1



Fascism used the cooperative influence as a tool of control and propaganda by appointing representatives of the Fascist Party as cooperative managers. RBs were later incorporated in the "National Board of Fascist Cooperation". However, the violent actions of the fascists against both the people and the banks' offices prompted depositors to withdraw money from RBs. Moreover, RBs started competing on the banking market with larger banking groups. The result was a decline in the number of the RBs. This process could not be prevented even by the introduction of the "Banking Law for Rural and Handcraft Banks" passed in 1937. Italy counted 3.540 rural banks in 1922 and by 1947 they were only 804 (this amounts to an yearly reduction by 3.1 per cent). In the meanwhile, the Banking Law passed in 1936 had put all banks under the supervision of the Bank of Italy. In the same year, the "National Board of the Rural Agrarian Banks" was established with the aim of supervising the technical coordination and to promote the formation of new RBs.

After the Second World War, RBs faced a period of re-organization. In 1946, the Catholic movement re-established the "Confederation of Italian Cooperatives" and 1950 the NFRBs were rebuilt. Between the 60s and the 80s, the RBs movement garnered a growing role in the Italian credit market due to an effort to reaffirm inspiring principles of cooperation and to strengthen internal linkages. The local Federations were also re-founded and empowered with the role of

representation, protection and technical assistance of CCBs, both at regional and interregional level. This structuring of the Federation on local basis was completed in the period 1964-1975 (Cafaro, 2011). In 1963, Badioli - the president of Federcasse, was authorized to create ICCREA[16], the main reference institute for the financial support of RBs. In the same period, both the process of democratization and of managerial integration have started, involving the second level network. Moreover, the "Central Guarantee Fund" was established as the main safeguard tool for the RBs.

In the second half of the 70s and during the 80s, RBs faced a period of low decline, mainly due to the fading role of farmers (main owners of rural banks) and to the public subsidies to farming, which transformed farmers from being net depositors to net lenders.

In 1980 the Federation together with numerous RBs joined the Italian Banking Association. The new Banking Law passed in 1993 represented a turning point, particularly for RBs, since it relaxed the previous limits to credit specialization and extension of their geographical area of business. "Banche di credito cooperativo" (Credit Cooperative Banks, this is the new name established by the law[17]) were basically allowed to offer all type of financial services and products. After this law, CCBs underwent a profound restructuring process, whereby some of them were liquidated, others were converted into either Banche Popolari or commercials banks, and others merged or got acquired. CCBs improved their general performance and they have not been squeezed out by commercial banks. Moreover, their second level structure got enforced. In 1997, the Deposits Guarantee Fund of Cooperative Banks substituted the Central Guarantee Fund. In 1999, the CCBs' movement signed the "Charter of Values of the Cooperative Credit" during the twelfth National Congress. Six years later, during the thirteenth Congress, the movement approved the "network system" project for CCBs, together with the "Charter of cohesion", which involved creating a form of cross-safeguard to protect the customers of CCBs (the "Institutional Guarantee Fund")

The main development phases of the Italian credit cooperative system are summarized in Table 2.

[16] ICCREA, Istituto di credito delle Casse Rurali ed Artigiane. Nowadays, ICCREA is a holding company, owned by the cooperative banks, the national Federation (*Federcasse*), the regional Federations, the Central Banks of Trento and of Bolzano. Its main role is to support, coordinate and control the members' companies: ICCREA Bank spa, the central Institute built in 1963 with its 6 branches, Agrileasing created in 1977, Aureo Gestioni spa, IMMICRA spa, Simcasse spa, Assimoco spa and Assimoco Vita spa, Ciscra spa, and SEF srl.

[17] By changing the name, the legislators wanted to put the accent on the "cooperative" character of this type of banks, instead of stressing the sectors with which they were allowed to work, as it was with the previous name ("Casse rurali and artigiane" – Rural and Handcrafts Banks). Among other things, the 1937 Law on Rural and Handcrafts Banks in fact constrained the rural banks to operate only with farmers, handcrafts and households. Moreover, body corporates could not become members.

Table 2

Timeline of Italian Credit Cooperative banks from origins till 2012

Data	*Events*
1883	Founding of the first rural credit cooperative bank in Loreggia (Padua) by Leone Wollemborg.
1888	Founding of the *Federazione fra le Casse Rurali e Sodalizi affini* (Federation of Credit Cooperative Banks and similar enterprises) with 51 Rural Credit Cooperative bank members.
1890	Founding of the First Catholic Rural Credit Cooperative in Gambarare (Venice) by don Luigi Cerutti.
1891	"Rerum Novarum" Encyclical by Pope Leone XIII
1893	Founding of the *Lega delle cooperative* (League of cooperative and mutual), the first institution to represent the cooperative movement as a whole
1909	Founding of the *Federazione nazionale delle Casse Rurali* (National Federation of Rural Banks)
1919	The "big split" Birth of the *Confederazione delle Cooperative Italiane* (Confederation of Italian Cooperatives) joined by the National Federation of Rural Banks as well
1926	Establishment of the *Ente Nazionale Fascista della Cooperazione* (National Board of Fascist Cooperation)
1936	Establishment of the *Ente Nazionale delle Casse Rurali Agrarie ed Enti Ausiliari* (Encra) (National Board of the Rural Agrarian Banks) Banking Law
1937	Enactment of the *Testo Unico delle Casse Rurali e Artigiane* (Banking Law for Rural and Handcraft Banks)
1946	Re-founding of *Confederazione Cooperative Italiane* and *Lega nazionale delle Cooperative e Mutue*
1950	Re-founding of *Federazione Italiana delle Cassa Rurali e Artigiane*
1963	Establishment of the *Istituto di Credito delle Casse Rurali e Artigiane* (Iccrea) (Credit Institute of Rural Banks and Handcrafts)
1973	Establishment of the *Cassa centrali delle Casse rurali trentine* (now, *Cassa Centrale Banca – Credito cooperativo del Nord Est*) and of *Cassa centrale Raiffeisen dell'Alto Adige* (the two Central Cooperative Banks with headquarters in Trento and in Bolzano, respectively)
1977	Founding of *Agrileasing Bank*, today known as Iccrea BancaImpresa
1978	Establishment of the *Fondo Centrale di Garanzia* (Central Guarantee Fund)
1981	The Federation and numerous Rural banks joined the Italian Banking Association (ABI)
1993	New banking Law
1997	The *Fondo di Garanzia dei Depositanti del Credito Cooperativo* (Deposits Guarantee Fund of Cooperative Banks), is set in substitution for the previous Central Guarantee Fund
1999	XII National Congress: Charter of Values of the Cooperative Credit
2005	XIII National Congress: Chart of Cohesion and "Network system" Project

Source: Federcasse, webside 2012

3.2 Credit cooperative banks model nowadays

The model of CCBs is defined by their ownership and governance structures. The 1993 Banking Law (D.Lgs. 385/1993, "Testo Unico delle Leggi in materia bancaria e creditizia", hereafter BL) weakened the differences between CCBs and commercial banks compared to the 1937 BL by imposing, among other things, limited liability, by allowing product de-specialization, and by deregulating the establishment of branches[18]. The BL has, however, preserved mutualism, localism,

[18] The establishment of a new branch is liberalised in the sense that, as for the other categories of banks, it no longer requires a Bank of Italy's authorization. The intention to open a new branch must be communicated to the Supervisory Authority and the branch can be opened unless the Bank of Italy prevents it within 60 days from the communication. The opening of a new branch can be stopped when the Bank of Italy considers the organization of the bank not adequate, or because of its economic, capital o financial situation. An exception to this rule is the case of a "secondary

democracy and the non-for-profit aim. These features preserve the cooperative form of CCBs even in the case of an increasing in size and in the heterogeneity of members. Moreover, these characteristics allow the CCBs to "have advantages in information gathering, monitoring and enforcement of contracts, and in reducing moral hazard", as stated in Jones and Kalmi (2009:170).

CCBs are *local* since they can operate only in municipalities where they have branches and in the neighbouring ones to guarantee the geographical continuity[19] (the so called "reference area")[20]. All residents in the reference area are eligible to become CCBs' member, regardless their economic activities. The reference area has to be explicitly included in the CCB's name. Customers are eligible to become members only if they either reside or operate with continuity in the CCB's reference area.

Their *mutualistic* feature is defined by law. CCBs have to address their risky activities mainly to members (or to non-risky activities). According to the Italian BL (art. 35)[21], CCBs grant credit "primarily" to their members. The statute fixes the exact percentage. However, according to the Bank of Italy's regulation[22], the legal requirement is fulfilled if at least 50 per cent of total risky assets are devoted to members or invested in government bonds (or in other assets with a zero-weighting coefficient according to the Basel rules)[23]. The actual amount of loans to members (over total loans) differs among CCBs[24].

CCBs have a *democratic* structure since the social basis must be widespread (the minimum number of members is 200, art. 34 BL) in order to have local interests sufficiently represented.

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headquarter", which can be opened under stricter conditions (see, "Istruzioni di Vigilanza per le Banche", Title III, Chapter I).

[19] A "discontinuity" in the reference area is allowed when CCBs merge with banks which reference area is not contiguous.

[20] The reference area of a credit cooperative bank is composed by the municipalities in which it has branches and the neighbouring ones, as defined by the Italian Banking Law of 1993 and by the Bank of Italy regulation. At least 95 per cent of the bank's risky assets must refer to this area, while the residual 5 per cent might be invested outside this area. The name of the bank must explicitly mention the geographical reference area.

[21] The 2003 Company Law Reform (Law 6/2003) introduced the distinction between "mutualism prevailing cooperatives" and "non-mutualism prevailing cooperatives" and allowed, among other things, a favourable tax treatment only to the former. Because of the compulsory "mutuality" requirement, all CCBs are by law "mutualism prevailing cooperatives". As the other cooperatives of the same kind, they are under the supervision of a special authority for cooperatives, whose aims are different from the ones of the Bank of Italy and cannot contrast with them.

[22] The Bank of Italy's supervisory regulation concerning CCBs is contained in the *Circolare* n. 229 "Istruzioni di vigilanza per le banche", Title III, Chapter I.

[23] The amount of risky assets referring to outside the competence area cannot exceed 5 per cent of total risky assets. No mutual requirement is set as for the funding activity or the provision of financial services.

[24] Considering the 15 areas which coincide with the competence of local Federations, over the 2004-2011 period, loans to members have been on average over the 50 per cent requirement only in Alto Adige, Abruzzo-Molise, Tuscany, Piedmont-Valle d'Aosta-Liguria and Trentino, while in the other areas the supervisory requirement is on average fulfilled thanks to investments in government bonds.

Moreover, the company capital consists of nominative shares that are not completely tradable on the market, since new subscribers are subject to the approval by old cooperative members. Law sets the maximum capital share each member can hold[25]. Finally, regardless the number of shares owned, each member has only one vote in meetings that is "one-head one-vote" principle applies.

The *non-for-profit aim* is assured by the assets locked principle. In case of withdrawal, exclusion of members, or bank's liquidation, members cannot be reimbursed more than the share price. Moreover, upon the liquidation of a CCB, its capital (net to the reimbursement addressed to member, according to the mentioned rule) must be devoted to the "Mutual Funds for the Promotion and Development of Cooperation". The assets locked constraint, peculiar of the Italian system, is the crucial difference between CCBs and other categories of banks including Banche Popolari. In order to avoid the infringements of this rule, mergers involving the transformation of a CCB into a bank of a different institutional nature (that is limited company or Banche Popolari) must be authorized by the Bank of Italy. The authorization is possible only when the merger is required in order either to preserve "creditors' interests" or to guarantee "bank stability". These two conditions imply a situation of crisis and are stricter than the general "healthy and cautions management" principle generally applied for banks' mergers. Moreover, art. 35 obliges CCBs to devolve the 70 per cent of the annual net profit to legal reserve, a total 3 per cent to the Mutual Funds (Fondo Sviluppo Spa, set up by Federcasse and Conf cooperative, art. 37 BL), and to use a residual part for charitable projects. In exchange for that, due to their social role, CCBs benefit from a favourable tax treatment.

The ownership structure

The ownership structure of CCBs is typical of a cooperative enterprise. Being of a cooperative nature, members own the bank and the assets locked applies. Moreover, the voting mechanism is based on the "one-head one-vote" democratic rule. This rule separates ownership from control and makes takeover not possible. An external investor who, for instance, thinks that a given cooperative is poorly managed cannot make a tender offer and get control of it. This "separation problem" is somewhat softened since directors must be members themselves, and because the peer monitoring mechanism, besides reducing information asymmetries in screening and monitoring customers, could also prevent directors from behaving in contrast with members' interests.

CCBs maximise the so-called "utilità sociale" (members' wealth) rather than profits (Federcasse, 2009). Given their non-for-profit aim, the shareholders of CCBs do not expect to

[25] The Banking Law of 1993 has fixed the range of price of each share. In order to avoid the concentration of ownership, one member cannot, currently, buy shares for a value above 50.000€.

receive dividends[26] as a way to remunerate their shares. Law regulates the revenue distribution in order to avoid speculative activities. Membership is not motivated by profit earning, but rather by expectation of better credit conditions, less costly financial services and more credit availability (Di Salvo and Schena, 1998). "Ownership" rights (e.g. the right to vote and to speak in the general assembly, the right of choosing directors etc.) only stem from membership, and they are not related with the amount of shares. Even though it formally exists a maximum threshold for the acquisition of shares, members do not have incentives in buying more than one share, since they will not receive dividends and will not acquire more voting power[27].

Members benefit from the disposal of the public good that the CCB creates: the availability of a financial service. However, non-members can benefit from the availability this public good as well, behaving as a free rider. In orders reward members, CCBs offer them credit or deposit conditions, which tend to be better with respect to non-members, even though this is not always the case (Piersante and Stefani, forthcoming).

The ownership structure, based on customer-owned members, reduces the asymmetry of information on both sides. From the bank side, making the customer part of the bank venture as a shareholder facilitates the collection of soft information and reduces the probability of having non-performing loans. From the members' side, the peer monitoring and the non-balance sheet approval threat reduce the costs of monitoring the manager and the directors.

Governance structure

For cooperative banks, the specific managerial structure is not only an operational frame but also a characteristic feature. The corporate governance involves a set of relationships among the boards of director, the manager, the shareholders and stakeholders. In particular, the governance specifies to whom and to which amount the decision power has been delegated and who is in power to control the decision making process.

CCBs present a cooperative structure with a three tiers system of administration and control: the general assembly of members, based on the "one-head one-vote" democratic principle, the board of directors and the supervisory body. The system is integrated by the arbitrors whose role is

[26] From art. 2514 of the Italian Civil Code, mainly CCBs cannot distribute dividends on the subscribed capital superior to the maximum interest of postal bonds increased by 2.5%. This limit regards "dividends". Moreover, these cooperatives cannot distribute reserves to user-members and they shall return in case of dissolution, all their assets to the mutual funds for the promotion and the development of cooperation (Fici, 2010).

[27] A possible reason to hold more than one share is to support the existence of the cooperative bank and can be interpreted as a signal of a strict preference for this to type of banks to survive.

to mediate between the board of directors and the members in case of conflict regarding the admissibility or removal of members. Given the various identities and objectives of the agents involve in the governance, the CCB structure can be defined as a multi-stakeholder one.

Together with the internal governance structure, CCBs are part of the external governance structure of, on the side, the national CCBs movement, and, on the other side, of the Italian banking industry. However, while the Central Bank, Bank of Italy, acts just as a supervisor of CCBs activities, CCBs are active members of their second level network—i.e. the Local Federation. Both presidents and managers join the second level bodies. Even though part of this second level network, that suggests CCBs possible policies and strategies, CCBs are autonomous in their decision making process.

However, the weakness of corporate governance of cooperative banks has often been identified as one of the major limitations of their development (Labie and Périlleux, 2008). This general statement is true for Italian CCBs too. As Draghi (2009) has underlined, the good performance of CCBs at least until the beginning of the financial turmoil, has not always been followed by corresponding improvements in management or in risk control. The dispersed ownership, for instance, can result in an insufficient monitoring of the management by shareholders. The fact that the manager is a member of the CCB mitigates the problem of a split in the goal of the manager and in the one of the members[28]. Managers, acting as loan officers, decide how to concretize policies adopted by the board in order to reach CCBs' goals.

Some issues related to the manager career arise especially with the larger scale. As the number of interactions increases, the problem of poor verifiability of the manager's behaviour deepens. The relationship between borrowers and lenders, in order to be effective, needs to be a long-term relationship (Longhofer and Santos, 2000). According to Lehmann and Neuberger (2001) who studied the German case, the relationship between the loan officer and the firm manager of SMEs affects the loan prices along with the collateral requirements and the credit availability. The social interactions, made possible thanks to the size of both partners, create reciprocal advantages thanks mutual trust derived by the personal knowledge. If on the bank's side it reduces the riskiness of the borrower, on the SMEs' side it improves the availability of loans while reducing the costs. In larger scale cooperative banks, the manager turnover is higher and the interaction with borrowers cannot be personal. However, a higher turnover can be beneficial for manager who gains from acquiring more experiences. Thus, even if from the one hand, the internal career assures continuity in the interaction between the manager and members, on the other hand, it could result in poor

[28] As a counter example, in the UK, one of the first consequences of the demutualization process has been the emergence of professional management pursuing personal goals together (Davis, 2005).

management given the lower skills of the manager.

The board of directors, elected by members is aimed at representing the local communities of members in which the bank is settled. Directors are not elected according to their professional skills in the financial sector, but thanks to their personal linkages with the community. The statute enlists the characteristics that should guarantee the moral integrity of the candidates. No others features[29] are required to be elected. The directors are in charge of approving loans above a certain amount and of deciding the investing strategy of the bank. Moreover, they decide on how to assign funds to local associations or to charity purpose. In allocating these funds, directors behave as politician once they allocate public goods.

According to a survey done by EURICSE in 2012 on a representative sample of CCBs[30], 66 per cent of loans are lent under the approval of the board of directors. On average cooperative banks redistribute the 18 per cent of their profit at the local community. The 70 per cent of the projects are financed according to board's ranking. The directors in the board are part of a broader local network. The reputational element is fundamental in a local community where the same person is in power in more than one board. In particular, data show that the 9 per cent of the directors are in power in other cooperative's boards, the 38 per cent are directors in non-cooperative institutions, and the 7 per cent join a governmental position. This last value is higher for smaller CCBs. Focusing on the president, the 43 per cent are appointed as directors in other cooperatives boards, the 54 per cent are directors in non-cooperative institutions, and the 12 per cent has a governmental position. Presidents join governmental positions only among small and medium CCBs. These data confirm on the one hand the interdependence of the CCBs' board with the local community and the importance of the peer monitoring; on the other hand they underline how this interdependence weakens with the increase in the size of the bank.

The problem of larger size

One of the constitutional requirements for a cooperative bank is the minimum number of members necessary to reach a minimum level of assets. There are, on the contrary, no maximal constraints on membership. The expansion of ownership may challenge the coherence with CCB's mission. Comparative advantages related to the reduction of the asymmetry of information, may be weakened, because it is more difficult to use the relationship lending mechanism. The direct or even

[29] In order to be appointed as president a minimal experience as director in the board is required. New rules have been recently implemented in CCBs statutes, implying more severe selection rules for board members, a more fluid turnover and a stricter regulation preventing conflicts of interests (art. 33, CCBs' Statute Format approved by Bank of Italy).

[30] The rate of answers is 67 per cent. Data should be considered as non-definitive.

a personal relationship between borrowers and the loan officer could be lost if the size increases too much and too quickly. In particular, the size becomes an issue when cooperative organizations moved toward more lose touch with their members.

The issue of larger size becomes a hot issue especially after the liberalisation process. The underlying idea at the base of the liberalisation process was that, thank to exploitation of the economies of scale created by the increase in size of banks, the system would have been more efficient. In order to enhance the increase in size, the bottom floor of CCBs—i.e., the membership—has been transformed into something more complex, while the managerial structure has not evolved accordingly. As Birchall and Simmons (2004: 488) have pointed out, "a key question for cooperative theorists and practitioners" is whether it is still possible for larger-scale cooperative and mutual businesses "to remain true to the principles on which they were originally founded". The crucial point is that a more dispersed ownership weakens the informal relationship between members and management and raises problems of asymmetries of information. The problem of ownership and managerial evolution is crucial to understand the changes in the performance of CCBs, and their adaptation process to the new market context (Mosetti and Santella, 2000).

First, the increase in the number of members impacts on the voting mechanism. Hansmann (1996) argues that the governance of cooperative banks is less stable as the members' number increases. The spread of ownership makes the individual position less important in the general assembly. The weakening of democratic control by the general assembly on management may lead to opportunistic lending policies. Second, the increase in size reduces member mobilization and favours free-riding behaviour that leads to increasing monitoring costs (Birchall and Simmons, 2004). As Olson (1965) has underlined, individuals have less incentive to contribute in larger groups because the larger a group is, the lower the value of a unit of the collective good that each member receives. Thus, a larger group requires more co-ordination and higher monitoring costs. The increase in the number of owners may reduce the incentives of each member to control the directors and the manager's effort, and to actively participate at the social life of the bank. Even the social control on the board and on the manager can be aware of the lack of capital market discipline and of the lower accuracy of the social monitoring pressure. The predictable behaviour is driven by a preference for short-termism and a reduction in the efficiency. However, in contrast to these positions, Jones and Kalmi (2012) find that Finnish cooperative banks have been able to successfully adapt to the larger scale thanks to innovative governance solutions that allow them on the one side to improve their performance, and on the other to maintain democratic governance.

Not only the numbers, but also the typology of members has expanded. After the 1993 BL,

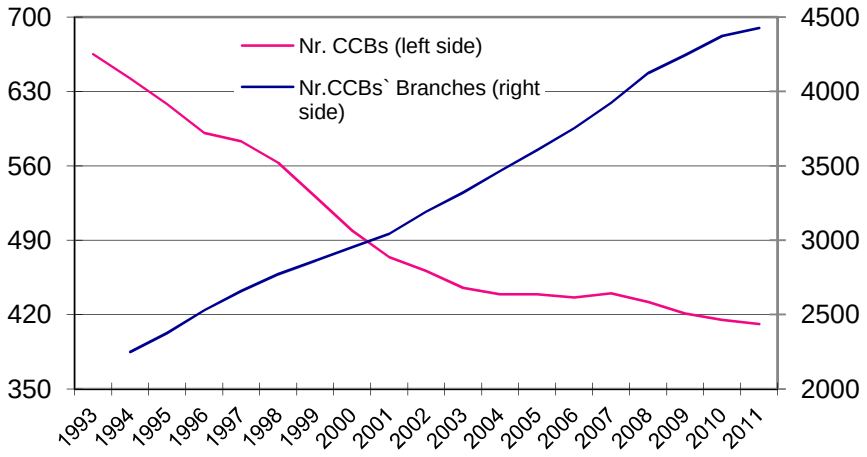
everyone can be a member, and not, as in the past, only farmers or artisans. CCBs, “coming from a predominantly agricultural approach, has moved to a "universal bank"-model.” (Zurdo and Palacio, 2008: 1). The possible result may be an increase in the interest differentiations, and an unbalance in the composition of the boards since its representativeness is based by the statute on geographical origins, and not on the economic industry of origins. The biased economic composition of the board may impact on the strategic choices of the board.

3.3 Credit Cooperative Banks in Figures

CCBs are the largest category among Italian banks in terms of the number of intermediaries (the 55.5 per cent of the total number of banks in 2011). At the end of 2011, the Italian CCBs comprised 411 banks distributed throughout the country with a network of 4,440 branches. With respect to 1998[31] the number of CCBs has decreased by 27 per cent, mostly due to mergers, a rate of decrease higher than the one registered by banking industry as a whole (-19.7 per cent). However, this process has been more than counterbalanced by the expansion of the CCBs’ branches network that has increased by 59.6 per cent from 1998 till 2011, a rate much higher than the banking industry one (28 per cent), reaching the 13 per cent of CCBs’ branches over the total number of branches in 2011 (Figure 4). This expansion has led to a wider presence of CCBs outside the rural environment, namely in towns and urban areas.

Figure 4

Credit cooperative banks and branches
(unity)



Source: Bank of Italy, online statistics

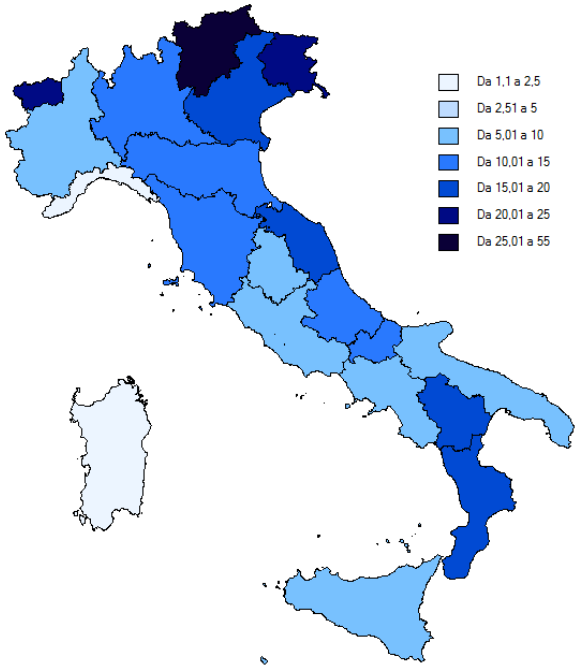
CCBs exist in about a third of Italian municipalities (2,711 municipalities); in more than 500

[31] According to the availability of data, the analysis has been performed comparing either 1998 or 1999.

municipalities, CCBs are the only financial institution (Federcasse, 2012). Even though they operate in every Italian province, most of them have their headquarter and branches in the North-East (see Figure 5).

Figure 5

CCBs branches over total branches
(percentage values, 2012)



Source: Bank of Italy, online statistics

The structure of CCBs has deeply changed over the last decade. In 1998 CCBs had almost 5 branches with 38 employees per bank on average; in 2011 these figures have increased to 11 branches with 77 employees[32]. The increase in the number of employees per CCB is in contrast to what the rest of the Italian banking industry has registered: from 1998 to 2011, while the number of employees in CCBs has increased by 47 per cent, in other types of banks it has decreased by 9 per cent.

In 2011, CCBs constituted about 8 per cent of the lending of the Italian banking industry, a proportion that more has than doubled in the past fifteen years (in 1996 CCBs accounted for 3.7 per cent, Finocchiaro (2002)). However, in order to be meaningful, a comparison must take into account the specific aim of CCBs. They do not compete with large banks in the overall lending market, but lend mainly to small borrowers[33]—i.e., SMEs and households. As Draghi (2009) has

[32] The mode has risen from 2 to 5 branches.

[33] CCBs do not have among their main customers subjects such as the public administration or the financial and insurance firms. These two types of clients account for a very small share of market, and it is possible to drop them

pointed out, more than 50 per cent of the credits provided to SMEs in Italy are distributed by bank branches in close proximity to the head office of the firm. The loans given by CCBs to SMEs have raised from 13 per cent in 1999 to 21 per cent in 2009, while the share of loans to households was of about 24 per cent in 2009. The share of lending to one- or few-person enterprises increased from 13 per cent in 1999 to 17 in 2009.

In the last decade CCBs have also increased the share of loans addressed to larger firms. Considering the composition of the lending market of CCBs, the industries to which the largest shares of the total lending in 2009 has been addressed are manufacture and real estate with a share of 21 per cent each. The increase in the share of loans to services is linked to the growing financing to the real estate sector. These figures are confirmed also by a survey[34], the MET survey, according to which SMEs in the manufacturing industry financed by CCBs are mainly local, as predicted by the theoretical literature. However, CCBs have also financed firms working at a national and in some case also international level. Moreover, CCBs have larger market share with firms facing or forecasting a negative dynamic in terms of labour forces and turnover (Borzaga and Catturani, 2011).

The funding structure of CCBs is mainly based on direct funding, namely deposits and bonds subscribed by customers, while the inter-banking funding provision is less relevant compared to other types of banks[35]. In 2012, the total direct funding has accounted for €152 billion with an increase of 8 per cent compared to 2009. Even though the direct funding is increasing, the amount of lending is growing even faster. From 2009 till 2012, CCBs have increase lending by 15 per cent, reaching the amount of € 138 billion. Given this dynamic, the direct result is an increase in the loans over deposit ratio that has grown by almost 7 per cent points in the period from 2009 till 2012. The gap funding has worsened: in 2012 the loans over deposit ratio was equal to 91 per cent (Federcasse, 2012). Thanks to their direct funding, however, CCBs are on average well capitalised. In 2012, their assets were around €19.2 billion, amounting to 6.3 per cent of the overall banking industry assets. In the same year, the members/clients ratio was around 17 per cent while the share of members as a ratio of the overall Italian population was 1.7 per cent.

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from the analysis without loss of generality.

[34] The research is based on a sample of 25.090 Italian SME, working in the manufacturing and in the services production industry. The survey and sampling design is based on a one-stage stratified random selection of units sample in strata without replacement. Data has been stratified according to regions (20) and size of the firm (defined by the number of employees[34]). The questions asked trough telephonic interviews (Cati) concerned different aspects of the business in 2011.

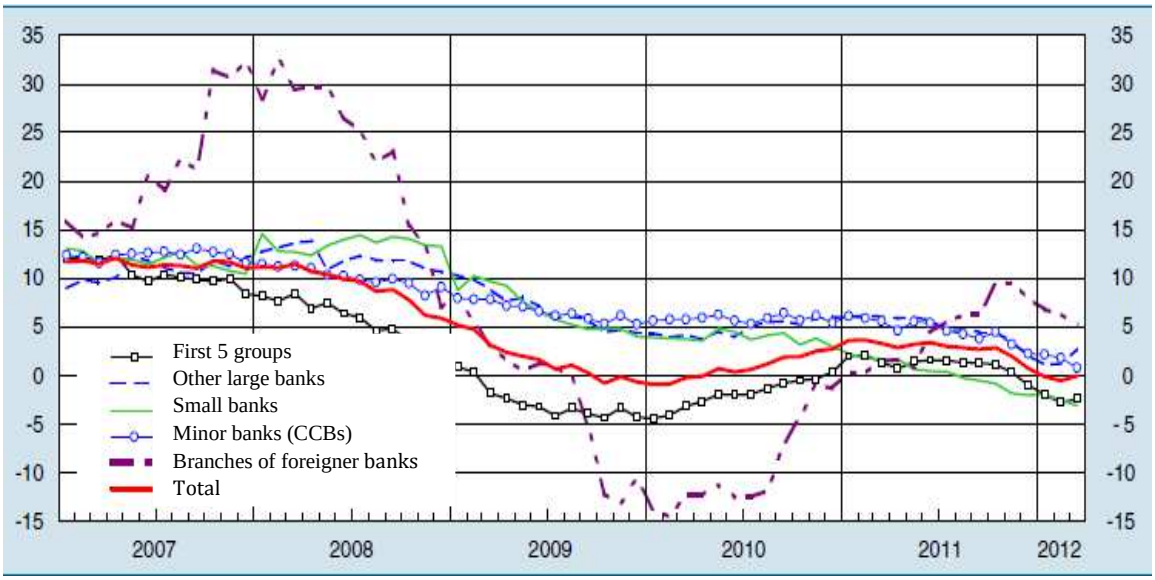
[35] In 2011 the larger share of liabilities (almost 48 per cent) came from the deposits of Italian customers (including public administration), while the share of the intra-banking deposits accounted only for 9 per cent. In the case of limited company banks the corresponding ratios were 38.9 per cent and 17.9 per cent and for "banche popolari" respectively 34.3 and 14.7 (Banca d'Italia, 2012).

During the financial crisis that started in 2007, CCBs have continued to finance the economy by maintaining a positive rate of growth of loans, as compared to largest commercial banks, which have shown a negative rate in 2009 (Figure 6). CCBs' continued to support the financial needs of their traditional customers and, at least in part, substituted large banks in the financing of local economies, given the more severe constrains in funding encountered by large banks (Tarantola, 2011). According to the MET survey, CCBs remained linked to a role of supporter especially for poor performing SMEs.

During the crisis, the economic margins have shrunk, mostly because of credit devaluations and of lower growth of activities in presence of a rigid cost structure (Tarantola, 2011). The cost/income ratio has increased from 70.2 to 74.2 between 2009 and 2010 and then decreased to 71.1 in 2011. The correspondent value for the total banking system was lower but increasing (from 63 to 67.6 per cent between 2009 and 2011). At the end of 2011 their *tier1* ratio was 14 per cent compared to 9.3 per cent of the all banking system (Bank of Italy, 2012). The solvency ratio has almost doubled the official threshold requirement. Their market share was stable, following CCBs tighter lending policies, mostly due to the liquidity problems that they started encountering in connection with the sovereign debt crisis.

Figure 6

Loans per bank's size
(percentage change compared 12 months before)



Source: Bank of Italy, Annual Report, 2012

However, given the support to local economies during the crisis, together with the financing

of non-traditional customers, CCBs have lowered the quality of their credit portfolio. During 2011 the rate of growth of CCBs loans has progressively declined and the incidence of new non-performing loans has gradually approached a level similar to the one of other categories of banks. During 2011, the rate of growth of CCBs loans has progressively declined, mostly because of funding problems connected with the sovereign debt crisis (Federcasse, 2012). To relax bank's funding problems and to sustain their capability to finance the economy, the Decree Law 201/2011 dated 6 December (ratified as Law 214/2011 of 22 December) has introduced the possibility of a government guarantee on bank's new liabilities. This measure, which has also increased banks' eligible collateral, has contributed to the widespread bank recourse, including that of CCBs, to the Eurosystem long-term refinancing operations, that have helped easing banks' funding problems, starting from the beginning of 2012.

CCBs and Banche Popolari: A comparison

Given their similarities in structure, a comparison between CCBs' and Banche Popolari's figures is worthily. Even though increasing, the number of CCBs branches in 2012 was almost 1000 less compared to the number of branches hold by Banche Popolari (5,318 in 2012) (Bank of Italy, 2012). From 2001, the number of independent Banche Popolari and of groups headed by Banche Popolari has decreased from 56 to 37, following the trend describe also for CCBs. However, not only their market in terms of total assets has risen from 16.8 in 2001 to 21.1 per cent in 2011, but also their branches share has grown from 21.1 to 27.3 per cent. Moreover, in the same period, these banks were able to increase their lending to residents from 15.9 to 21.6 per cent (Tarantola, 2011).

Comparing Figure 5 with Figure 7, it appears immediately clear how Banche Popolari are more present in those regions where the presence of CCBs is lower—i.e., Puglia. However, there are region, such as Sardinia, where the cooperative financial institutions are in general not present, while other regions, such as the regions in the North, where the cooperative banks hold a relevant share of braches (in Veneto for instance the share of cooperative banks is 42.8 per cent, while in Sardinia is just below 1 per cent in 2012).

Unlikely CCBs, Banche Popolari are characterised by the presence of independent banks and by groups of banks headed by Banche Popolari. The five largest groups have more than doubled their average number of branches from 1998 to 2011 reaching the number of 1,340 branches each. Banche Popolari not belonging to groups have in 2011 23 branches each on average, 7 more than in 1998.

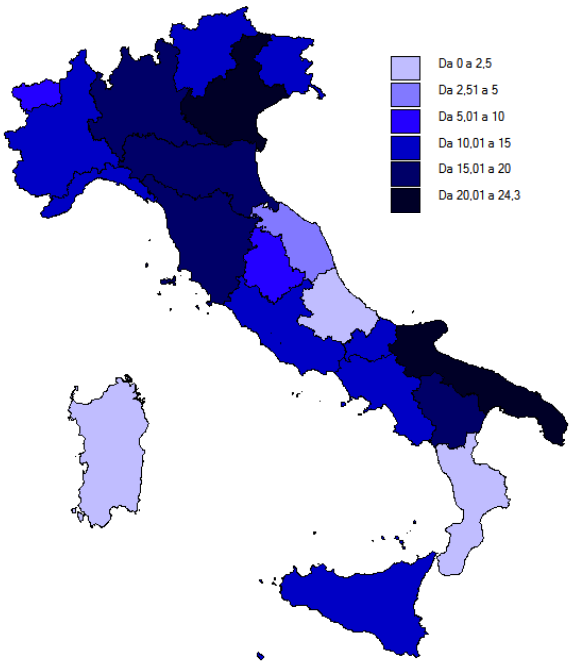
While independent Banche Popolari are still close to their traditional cooperative business model, the largest groups headed by Banche Popolari can be considered closer to a stock joint

company. Their average value of total assets was in 2011 almost twenty-five times that of the other Banche Popolari. Moreover, two of these groups are among the top five in Italy in terms of total assets and eight of the Banche Popolari groups are listed on the stock exchange or have at least one listed member. Their organization is structured, for the most part of the multifunctional federal type (Tarantola, 2012).

According to this comparison it is clear how CCBs and Banche Popolari, even if both based on a cooperative form, are actually different in the way in which they carry on their business. Considering in particular the banking groups headed by Banche Popolari, it emerges how they have lost some of the main advantages of the local cooperative banks—i.e., the relationship lending to purse a path of growth based on transaction lending, more similar to commercial than to cooperative banks.

Figure 7

Banche Popolari branches over total branches
(percentage values, 2012)



Source: Bank of Italy, online statistics

3.4 Conclusion

CCBs banks have represented a successful model of banking, able to respond to market failure. During the last two-century, the CCBs have been able to organize themselves into a two-level network and to spread their influence on the whole territory. Their peculiar ownership structure has helped them in exploiting the advantages of the relationship lending. However, the weakness of

their managerial model might arise problems especially with the increasing of their size. However, up to now, CCBs have well performed with an increase of their market share and of their members, in particular after the liberalisation process of 1993.

However, differences among CCBs have become relevant. Their variety results in different business' patterns. Some CCBs have remained a local bank, deeply eradicated in the local community, with a few branches and a low number of employees; their member to population ratio is high, while the area they served is narrow. Other CCBs have followed a different strategy with an increase in size, an enlarging of their operating area with the opening of new branches and/or through M&A, and a possible reduction of their tightness with the local community. According to these findings, it is worthily to consider CCBs as a homogenous group? Do all CCBs have the same characteristics? Which are the main differences among them? Do these differences arise new problems for CCBs? The next chapter attempts to describe these patterns and to answer these questions.

4 Opening the black-box: Heterogeneity among credit cooperative banks

The following chapter[36] focuses on two research questions: (1) Are CCBs a homogenous group of banks, (2) Which are the characteristics that differentiate CCBs among them? In order to find an answer to these questions, Italian CCBs have been divided in groups according to their size and the area in which they operate. This classification is a first step to understand the dynamic of CCBs in the recent years and to underline the differences among CCBs especially during the financial crisis. While the choice of the geographical area is straightforward, the classification through size needs to be justified.

An open question regarding CCBs is whether smaller banks will be able to survive in a competitive environment. In this regard, the dimension of cooperative banks is an important characteristic that needs to be examined. It is often implicitly assumed that the smaller CCBs are the less are they capable of exploiting economies of scale. Therefore, they will not be able to grow and, eventually, expected to disappear (Alessandri et al., 2002). The amount of total assets is the most commonly used variable in the literature as a measure of size. Following this practice, this chapter aims to investigate the differences among CCBs, grouped according to their size, in terms of both structural and economic variables. It tries to identify how the growth dynamics of CCBs vary over time according to their size. The choice of total assets of CCBs to capture their size effects is motivated by the following considerations: (i) The scheme used by Bank of Italy to classify banks depending on their size is based on total assets; (ii) it is a widely used proxy for size in the literature (Gorton and Schimid, 1999; Legget and Strand, 2002); (iii) total assets provide a good summary measure of the performance of the bank. It is worth noting that the size classification used by Bank of Italy does not account for differences among CCBs, since they all fall into the same cluster—i.e. minor banks. In order to describe differences and similarities, an *ad hoc* method of classification will be used here. Though this classification is *ad hoc*, it is used because the traditional classification measures are not readily applicable for CCBs. Heterogeneity could be described in many other ways as well, using different variables to define the clusters in the first place. In chapter 5, the impact of others variables, including financial ratios, on the growth of CCBs will be analysed through econometric tools.

After a short introduction, section two of this chapter will introduce some descriptive statistics about CCBs and discussed the differences by size and by geographical area; section three

[36] Joint chapter written together with Maria Lucia Stefani (Bank of Italy, Trento branch, Italy). The opinions expressed in this paper are those of the authors and do not involve the responsibility of the Bank of Italy.

will focus on the lending describing the behaviour of CCBs and their between and within differences both by macro-area and by size. Finally some conclusions are drawn.

4.1 Introduction

Since 2004, when the restructuring process of the Italian banking industry was at its end, CCBs have grown in many different aspects, not only in their market share. Analysing other figures other than market shares, it is possible to derive peculiar aspects of these banks. Between 2004 and 2009 members have increased by 7.6 per cent per year; borrowing members by 7.4 per cent and customers by around 5 per cent. The number of branches has risen with a yearly average rate of 5.4 per cent, while the employees with an average rate of 4.8 per cent. The population served by CCBs has on average gone up by 4.3 per cent annually, slightly below the yearly average increase of their reference area (Table 3). This enlargement in structure is mainly explained by the process of mergers and acquisitions undertaken by both CCBs and by commercial banks starting from the early nineties. Thanks to the restructuring process of commercial banks, CCBs gained a lot of small customers, disregards by those banks. Furthermore, the M&A among CCBs has result into an increase in their size. The highest number of M&A among CCBs has been registered in 1995, after which their frequencies has decreased till 2007. During the financial crises, the M&A has increased again until 2009, reaching the level of 2004, after which the path has decreased (see Figure A 3 and Table A 1).

Table 3

Credit cooperative banks in figures

(*Average values*)

	Total Assets (milions of Euro)	Loans (milions of Euro)	Members (Units)	Borrowing members (Units)	Customers (Units)	Employees (Units)	Branches (Units)	Served area (Km2)	Served population (thousand of inhabitans)
				2004					
Italy	**304**	**174**	**1,656**	**699**	**3,021**	**58**	**8**	**1,151**	**312**
First quartile	103	50	789	313	1,224	20	3	519	70
Median	209	108	1,224	511	2,221	40	6	904	164
Third Quartile	396	229	1,990	881	4,123	78	10	1,477	359
Stand. Deviation	301	183	1,576	663	2,613	56	6	886	458
Variation Coefficient	99	105	95	95	86	97	82	77	147
				2007					
Italy	**397**	**241**	**2,036**	**863**	**3,351**	**66**	**9**	**1,277**	**360**
First quartile	125	66	943	359	1,360	24	4	566	82
Median	253	146	1,514	629	2,507	47	7	1,009	182
Third Quartile	502	302	2,434	1,055	4,279	87	12	1,653	460
Stand. Deviation	421	267	2,027	884	2,954	62	7	979	507
Variation Coefficient	106	110	100	102	88	95	83	77	141
				2009					
Italy	**419**	**285**	**2,386**	**997**	**.**	**73**	**10**	**1,437**	**385**
First quartile	134	78	1,044	402	.	26	4	637	85
Median	276	175	1,687	679	.	53	8	1,117	190
Third Quartile	528	357	2,895	1,268	.	93	13	1,851	477
Stand. Deviation	433	322	2,589	1,105	.	70	9	1,189	543
Variation Coefficient	103	113	109	111	.	96	85	83	141

Source: Bank of Italy.

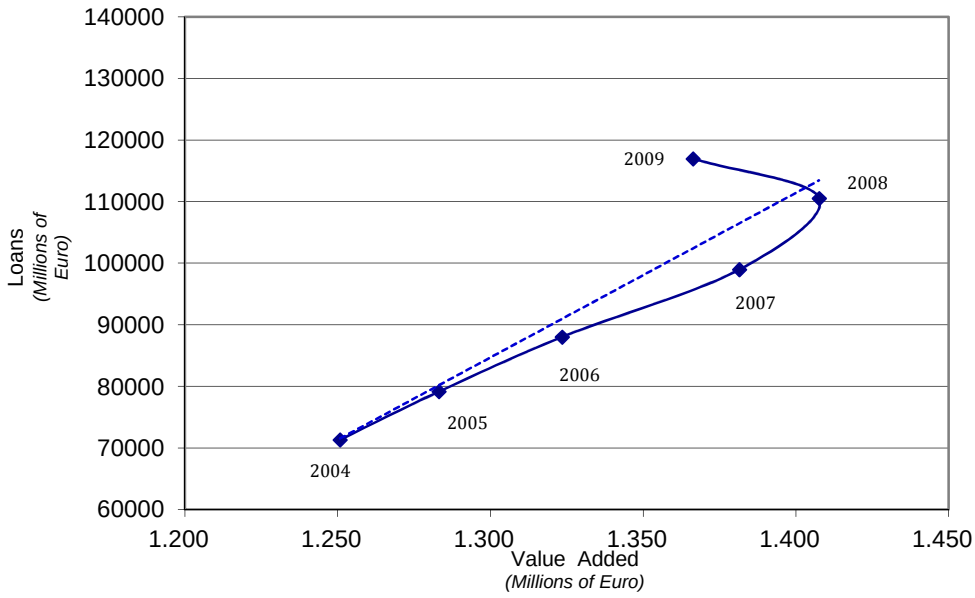
The financial turmoil has substantially impacted on the growing path of banks in general and on CCBs in particular. However, while commercial banks have immediately react by freezing their lending, CCBs have kept financing the economy dealing with the risk of increasing the share of non-performing loans. This has led CCBs to increase in the number of members. Comparing the pre- and the crisis period, the number of CCBs members has increased at a yearly average rate of 7.1 per cent from 2004 to 2007, while, during the financial turmoil, it has increased by one percentage point more. The growth of borrowing members, as well as the growth of non member-customers, has followed the same trend reported for members. Finally, the incidence of members on the population has slightly increased during the crisis: the rate, which was equal to 0.56 per cent in 2007, turned to be equal to 0.62 per cent in 2009. In order to face the increase in their members, CCBs have invested in labour. The average number of employees per CCB has shown a positive growth rate both in the pre- and in crisis periods. In particular, during the crisis, CCBs have increased the number of their employees, thus not reducing their cost of labour. The yearly rate of growth of branches has slightly increased during the crisis, so as the yearly average growth rate of the reference area passing from 3.5 per cent in the period 2004-2007 to 6.2 per cent in 2008-2009.

From 2004 to 2009 CCBs have increased in the amount of both total assets[37] and lending activity to ordinary customers. However, while the rate of growth of total assets has decreased during the crisis, the rate of growth of loans remained positive. In particular, the rate of growth of total assets has fallen from 9.6 in 2007 to -2.1 in 2008, while in 2009 it has turned positive with a value of 7.8 per cent. On the contrary, the yearly average growth rate of loans has reported a value of 10.4 during the overall analysed period. The turmoil has affected the growth rate of loans only in 2009, when the rate has increased only by 5.8 per cent. CCBs, as already mentioned, have financed the economy also during the crisis, impacting in a more softly and less rapid way on the credit availability of their customers. Moreover, this growth rate has never registered a negative value until 2009. The relationship between loans and the total value added, defined as the sum of the remuneration of the production factors, usually positive, have registered a reverse U-shape in 2008 (Figure 8). In 2009 the amount of value added decreased, while the lending by CCBs has maintained a positive trend, even if at a lower rate.

Figure 8

Loans granted by credit cooperative banks

(*Incidence on the value added*)



Source: Bank of Italy and Istat

[37] In order to have time-consistent data for CCBs that merged during the analysed period, merging CCBs have been considered as merged since 2004, by summing the values concerning each of merging banks from the beginning. The analysis has excluded CCBs that were either born or dead (for reasons different from mergers and acquisitions) during the period of time we have considered because their information is not complete or may show outliers.

4.2 Heterogeneity in CCBs: a general overview

The figures discussed above hide the relevant phenomenon of the heterogeneity existing between Italian CCBs. The following analysis[38] tries to describe that variety by dividing CCBs into subsets following two criteria: the first one is a geographical criterion related to the regional federation in which CCBs are settled[39]; the second one is based on their size[40].

Members – The increasing in the sample variability in the period 2004-2009 for the members' growth rate has been driven by the faster growth of the highest values. When CCBs are divided into regional subsets and when the period is split in pre- and crisis period, this fact is even more evident. In the crisis period, for instance, Piedmont-Valle d'Aosta-Liguria has registered a yearly average growth rate of members equal to 19.5 per cent while Abruzzo-Molise has shown a value equal to 1.8 per cent. In general, while in some regions members have slowed their growth after 2007 (for instance in Lazio-Umbria-Sardinia, Calabria, Campania, Trentino, Abruzzo-Molise), others have soared it (Sicily, Puglia-Basilicata, Piedmont-Valle d'Aosta-Liguria).

Looking at banks grouped by size, the number of members of *large* and *major* CCBs has grown faster compared to *small* CCBs. Furthermore, the growth rate of *large* CCBs has achieved, in the crisis period, the highest level (11.3 per cent).

Among members, borrowing members have followed a similar path of growth to the one described above, with a positive yearly growth rate. Once the share of borrowing members over the total number of members is taken into account, one sees that before the financial turmoil the quota of borrowing member was almost stable. However, after 2007, the share of borrowing member has declined, due to the slower increase of borrowing member with respect to members.

Branches and Employees – The number of branches can approximate the capacity of each bank to control a territory. However, given the relative short period analysed, it is not excepted to be very dynamic. The growth rate of branches has not varied considerably among regions, so as it has not markedly changed through years. Actually, in most of regions the average number of

[38] The analysis is based on some descriptive statistics. The statistics used to examine the differences among subpopulation of CCBs include both measures of position (mean, median) and measures of variation (skewness, quartile deviation, variance and standard deviation).

[39] Italian CCBs are grouped into 15 local Federations (affiliated to the central Federation, *Federcasse*), the territorial extension of which mainly depends on the number of CCBs settled in the area. The 15 areas are shown in the Appendix, in Table A 2.

[40] For the purpose of this chapter, CCBs have been divided into four groups: (1) *major* CCBs (with average total assets over 1,3 million euro); (2) *large* CCBs (from 400 to 1,3 million euro); (3) *medium* CCBs (from 100 to 400 million euro); (4) *small* CCBs (with total assets on average lower than 100 million euro). Banca di Credito Cooperativo di Roma, which is much bigger than other CCBs, has been considered as an outlier and therefore it has not been considered in the analysis

branches per CCB has increased just by one from 2004 to 2009, which the exception of Piedmont-Valle d'Aosta-Liguria (7 additional branches per CCB on average). The financial turmoil has not changed this trend even though it has increased the variability in some area, such as Piedmont-Valle d'Aosta-Liguria.

The analysis by size has depicted a clear growing path. Size groups of CCBs have grown with a similar rate. However, while this has result in an increase of 10 units for *major* CCBs; *small* CCBs augmented it by less than one unit. The turmoil has not impacted on this path.

The number of employees per branch can be considered, on the one hand, a proxy for the efficiency level, while on the other it may describe the proximity to customers. In the period 2004-2009, CCBs have reduced the number of employees per bank. The regional split has not underlined remarkable differences among geographical groups, unlikely the size split. In the majority of regions, CCBs have reduced the number of their employees per branch, with a yearly average rate included in the -2.4 rate of Lombardy and -0.1 in Veneto. The financial turmoil has not deeply impacted on these figures. While in 2004-2007 three regions (Calabria, Trentino and Puglia-Basilicata) have shown positive growth rate for employees per branch, in 2008-2009 this figure has increased reaching six regions with a positive even though very small value.

Clustering per size, it emerges how only *small* CCBs have reported a positive yearly average growth rate for the employees per branch value in the period 2004-2009. All the others have reduced their ratio, from a maximum of -1.8 per cent for *major* CCBs to a minimum reduction value of -0.2 per cent for *medium* CCBs. Such trends have not been affected by the turmoil. *Major* CCBs have maintained a negative sign, while *small* CCBs have kept a positive growth. In both case, the crisis has increased the magnitude of their growth rates.

Reference Area and Population – The main figure about the reference area has shown an increase in the variability driven by the enlargement of the maximum value. The largest area per CCB has been found in Piedmont-Valle d'Aosta-Liguria[41] and in Emilia-Romagna. Lombardy has registered, together with Piedmont-Valle d'Aosta-Liguria, the highest average growth rate from 2004 to 2009. Alto Adige was the region with the smallest reference area per CCB. Trentino has shown a higher growth rate compared to Alto Adige but the resulting reference area has been only slightly higher than the one of Alto Adige. As an effect of the crisis, the growth of the variability has changed sign, turning positive and with a yearly average rate that exceeds 10 per cent.

Large CCBs have been the most dynamic ones, while *small* banks have grown at the lowest yearly average rate. Even though the values of growth rate are similar, the differences in the amount

[41] Data concerning Piedmont-Valle d'Aosta-Liguria are however driven by one of the largest Italian CCB that is settled in this area.

of reference area are relevant, as expected. The financial turmoil has increased the gap among the growth rates of different size groups (Table A 2).

Looking at the descriptive statistics, it turns out that from 2004 to 2009 CCBs with larger size have grown more rapidly then smaller CCBs settled in area where the cooperative financial institutions have a longer history. The financial turmoil had a strong impact on the magnitude of such differences, in some cases softening them, in others reinforcing them. However, these analyses are only performed through a comparison among descriptive statistics on that have not been tested to check their significance validity.

4.3 The heterogeneity of CCBs in lending

Data on loans have shown that CCBs have enlarged their market share with a positive growth rate until 2007. During the financial turmoil they have supported the economy maintaining a positive rate of growth. However, this figure does not account for the variability that exists among them. While larger CCBs have faster increased their lending on the overall period, smaller CCBs have grown slowlier, increasing the variability in the groups. Furthermore, the financial crisis has caused a reduction in the growth rate of loans, especially for the less dynamic CCBs. However, the reduction in the yearly average growth rate has determined a slowing in the growth of the variability resulting in an almost unchanged variation coefficient[42] in 2008 and 2009 (Table A 2).

A pair-wise comparison based on a t-test among the yearly growth rate of CCBs' loans at regional level has underlined two main points: (i) from 2005 till 2009 the number of comparisons showing statistical differences between regions have increased even though in 2007 CCBs resulted to be more similar; (ii) in 2009 both Piedmont-Valle d'Aosta-Liguria and Alto Adige[43] have registered yearly growth rate statistically different from all the other regions (Table A 3 and Table A 4). While the rate of growth is higher for Piedmont-Valle d'Aosta-Liguria compared to the average rate, it is lower for Alto Adige (16.8 the first versus 3.1 the second). Furthermore, analyzing the differences in the growth rate of CCBs by size, it emerges that while in 2007 all the by-size groups of CCBs were pair-wise statistically different, in 2009 only *major* CCBs have maintained a growth rate statistically different from all the other CCBs groups.

The following sections focus on the heterogeneity of CCBs grouped by size, first, and by macro-areas, second. Furthermore, each section will include two types of analysis: the between

[42] The coefficient of variation is a measure of the overall dispersion and it is defined as the ratio between the standard deviation and the mean. It is a useful measure because, differently from the standard deviation, it is a normalized measure that can be implemented for comparisons.

[43] Alto Adige has actually shown yearly growth rate statistically different from all the other regions from 2006.

groups and the within group one.

A between and within analysis of CCBs by size clusters

Loans have fast increased from 2004 to 2009. Even when the period is split into a pre- and during-crisis, the yearly average growth rate of loans remains high. The question is whether it is a general path of growth or if there are relevant differences between and within groups of CCBs.

Between Analysis

In the period 2004-2009 *major* CCBs – the smallest group in terms of number of banks – have distributed the largest share of loans, accounting for more than the 60 per cent, and with an increasing trend. In 2009, *major* CCBs granted, on average, three times the amount of *large* CCBs (Table 4). Their average growth rate in the period 2007-2009 was equal to 9.8 per cent, in line with the growth rate of the other size-groups. Before the crisis the enlargement of the share for *major* CCBs has occurred at the expense of *large* and *medium* CCBs, while during the crisis it was the market share of *small* CCBs that decreased the most. The between statistic[44], which describes differences between groups, while increases in the period before the crisis by 39 per cent, decreases from 2007 to 2009 by 34 per cent reaching in 2009 its lower value (10.5). This dynamic has been mainly determined by to the slowdown in the growth rate of loans of CCBs from 2008 to 2009, when the variation in each dimensional group falls (Figure A 4). In practical, the growth rate of loans in 2009 was very close to its mean describing a situation in which regardless of their size, the path of growth for loans was similar for all CCBs.

[44] The between variance has been computed through the following formula: $\frac{\sum_z^{n=4} n_i(\sigma_z^2 - \bar{x})^2}{N}$ where σ_z^2 is the variance of the group, $\bar{x}$ is the mean, n_i referees to the number of banks in each group, N is the number of bank in the full sample.

Table 4

Loans of credit cooperative banks by size (1)

		2004		2007		2009	
	Nr. CCBs	Loans by size *(%)*	Mean Value *(mln of €)*	Loans by size *(%)*	Mean Value *(mln of €)*	Loans by size *(%)*	Mean Value *(mln of €)*
Major CCBs	14	63	807	66	1216	66	1455
Average growth rate (%)				*3,5*	*16,9*	*0,5*	*9,8*
Big CCBs	108	26	332	25	458	24	540
Average growth rate (%)				*-5,3*	*12,6*	*-1,1*	*8,9*
Medium CCBs	206	8	106	8	143	8	169
Average growth rate (%)				*-7,5*	*11,6*	*-0,7*	*9,1*
Small CCBs	82	2	29	2	37	2	43
Average growth rate (%)				*-10,6*	*10,0*	*-2,0*	*8,3*
Total CCBs	410	100	174	100	241	100	285
Average growth rate (%)					*12,9*		*9,1*

Source: Bank of Italy

(1) CCBs have been divided into four groups (cfr. footnote 40). Banca di Credito Cooperativo di Roma, which is much bigger than other CCBs, has been considered as an outlier and detached from the analysis. MCBs that were involved in a M&A process between 2004 and 2009 have been considered as merged from the beginning of the period, so as to obtain homogeneous data over time. Moreover the analysis has excluded CCBs that were either born or dead (for reasons different from M&A) during the period of time considered because their information is not complete or may show outliers.

Within Analysis

Major CCBs – Before the crisis, the growth rate of loans for *major* CCBs has achieved a yearly average value of 14.7 per cent. The coefficient of variation has declined, describing a diminishing variability inside this group. *Major* CCBs were less diversified in 2007 than in 2004, at least those below the third quartile (Figure A 5 (a)). On the contrary, the distance between the third quartile and the maximum value has increased, in both relative and absolute term. During the financial turmoil, the marked growth of the highest values has lengthened the box plot, revealing a more within-group heterogeneity.

Large CCBs – The figures presented for *major* CCBs are even more evident for *large* CCBs. The crisis has strongly lengthened the box plot of *large* CCBs, furthering the extreme values. More than *major* CCBs, *large* CCBs have accelerated a process that has already started in the pre-crisis period. Looking at this trend in more details, it emerges how from 2004 to 2007 the amount of loans given by these CCBs has annually increased by 11.3 per cent. The variation coefficient has shown a faster growth, even though the increase in the variance has to be attributed to the faster increase of the higher values. The crisis has positively impacted on the growth of loans. However, the growing of the highest values and the smoother rate of growth of the value under the third have quartile resulted into a relevant increase in the variability of the sample.

Medium CCBs – *Medium* CCBs have shown a less marked pattern of diversification. The

growth rates of loans before and during the crisis were similar. Actually, while from 2004 to 2007 *medium* CCBs' loans have grown at an average yearly rate equal to 10.5 per cent, from 2007 to 2009 this rate has turned to 8.7 per cent per year, with a slight reduction in 2009. Thanks to the faster speed of growth of the lowest values, the relative difference between the minimum and the maximum decreased in the pre-crisis (Figure A 5 (c)). By contrast, it was slightly higher during the crisis, due to the acceleration in the growth of the highest value, which has enlarged the relative distance between the third quartile and the maximum. The variation coefficient increased by 1.2 per cent before the crisis and by 4,7 per cent afterwards. Even though, as in the case of *major* and *large* CCBs, there has been a reduction of variability in the pre-crisis and acceleration during the crisis driven by the growth of the highest values, *medium* CCBs have reported less marked diversifying process.

Small CCBs – Small CCBs, even stronger than *medium*, have followed a constant path of growth, with a reduction of variance in the first period followed by a stationary level variability in the second one. Analysing in more details the pre-crisis period, it has to be underlined that their average yearly growth rate has been the lowest (9.2 per cent) with a reduction of the coefficient of variation thanks to the faster increase of the minimum values (Figure A 5 (d)). Moreover, these banks have registered the lowest reduction on their growth rate value due the crisis.

To sum up, in the pre-crisis period, CCBs have shown a reduction in their within group variability. During the crisis, the variability has increased due to the faster growth of the highest values compared to the lowest. This trend has emerged especially for *major* and *large* CCBs, while *medium* and *small* ones have shown a more stable growth of the internal variability. Furthermore, during the crisis differences among the growth rate of clusters have reduced, assessing their value between 9.5 for *major* CCBs and 8.0 per cent for *small* CCBs.

A between and within analysis of CCBs by regional clusters

Between Analysis

From 2004 to 2007 the largest share of loans has been granted by CCBs in the North East regions, even though the amount of loans has decreased over the period. The loss in the market share of North East has turned to be a gain for CCBs both in the North West and in the Centre (Table 5). In the South and Islands, CCBs have registered the lowest share. In 2007, due to a lower rate of growth of CCBs in the North East and a higher rate for CCBs in the Centre, their relative distance has reduced markedly and this trend has continued also during the crisis.

From 2008 to 2009, the four macro-areas have on average halved their rate of growth. In 2009, North East has registered the lowest value equal to 4.6 per cent, while regions in the North

West have reported the highest rate with a value of 7.4 per cent per year (Figure A 6(b)). The crisis has reduced the growth rate of the variance: before the crisis, its value was growing at 26.3 per cent per year, while during the turmoil the rate has turned to 20.9 per cent.

Table 5

Loans of credit cooperative banks by macro-area– A between analyses (1)

		2004		2007		2009	
	Nr. CCBs	Loans by area *(%)*	Mean Value *(mln of €)*	Loans by area *(%)*	Mean Value *(mln of €)*	Loans by area *(%)*	Mean Value *(mln of €)*
North East	56	25	315	25	450	26	549
Average growth rate (%)				*1,0*	*14,3*	*1,3*	*7,4*
North West	173	50	209	49	282	47	322
Average growth rate (%)				*-0,8*	*11,7*	*-1,1*	*4,6*
Centre	81	16	147	17	213	18	260
Average growth rate (%)				*1,5*	*15,0*	*1,2*	*7,3*
South and Islands	101	9	62	9	84	9	99
Average growth rate (%)				*-1,1*	*11,3*	*0,0*	*5,9*
Total	410	100	174	100	241	100	285
Average growth rate (%)					*12,9*		*6,1*

Source: Bank of Italy

(1) CCBs are divided into four geographical groups: "North West" (Piedmont -Valle d'Aosta-Liguria, Lombardy); (2) "North East" (Trentino, Alto Adige, Veneto, Friuli Venezia Giulia, Emilia Romagna); (3) "Centre" (Toscana, Lazio-Umbria-Sardinia, Marche, Abruzzo-Molise); (4) "South and Islands" (Puglia-Basilicata, Campania, Calabria, Sicily). Banca di credito cooperativo di Roma has been considered as an outlier and detached from the analysis. CCBs that were involved in a M&A process between 2004 and 2009 have been considered as merged from the beginning of the period, so as to obtain homogeneous data over time. Moreover the analysis has excluded CCBs that were either born or dead (for reasons different from M&A) during the period of time considered because their information is not complete or may show outliers.

Within Analysis

North West – In this area, loans have grown by a yearly average rate equal to 10.6 per cent from 2004 to 2009. However, in the period 2004-2007, the most relevant increase has been the one registered by the maximum value (Figure A 7(a)). The relative distance has increased both between the extreme values and between the value of the third quartile and the maximum. In 2009 the enlargement of the range has stopped. The crisis has slowed the growth of the range, while it has increased the variability around the mean.

North East – Before the crisis, in the North East, the growth rate has shown a large value (yearly growth rate of 12.7 per cent). However, the coefficient of variation has increased on average by 2.1 points per year. In 2009 two trends have emerged: on the one hand, the relative distance between the extreme values has increased markedly; on the other hand, the variance has lowered its yearly average growth (from 15 to 12 per cent). Thus, CCBs below the third quartile have reduced their variability, while CCBs with higher value have enlarged their range.

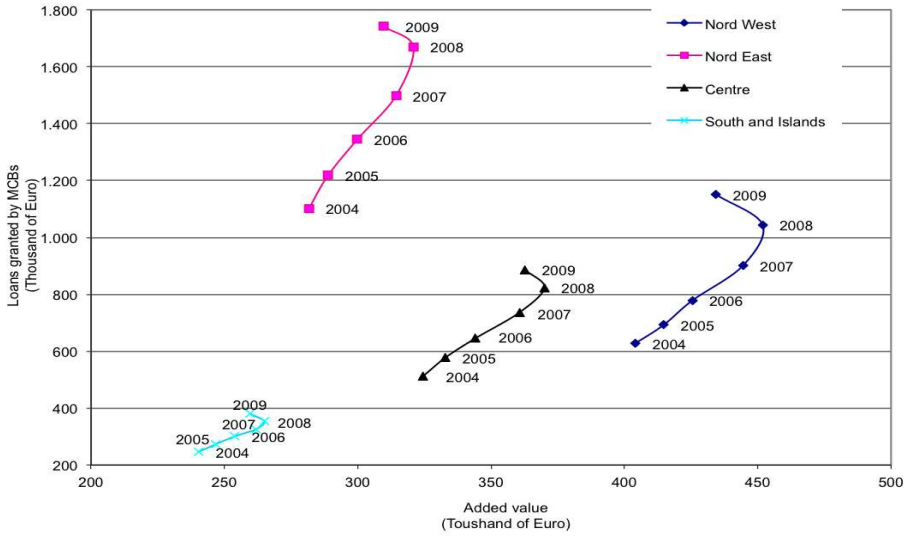
Centre – CCBs in the central regions have followed a pattern of growth close to the one described in the North East. The pre-crisis rate of growth for loans has increased by 13.2 per cent per year. The path of growth in this period, on the one hand, has increased the variability inside each cluster due to the extension of the quartile deviation, while on the other hand the relative distance between the ranges has remained almost unchanged. From 2007 to 2009, the yearly average rate of growth of loans has decreased by three percentage points (from 13,2 to 10,4 per cent) while the accelerated growth of the highest values has determined a relevant distance between the extremes values. Thus, in 2009, CCBs were more different than in 2004, mainly because of the higher rate of growth of the better performing banks.

South and Islands – The value of loans granted by CCBs in the South and Islands has shown an average increase by 10.3 per cent per year from 2004 to 2007, slightly below the value of the other areas. The coefficient of variation has shown a negative growth and the distribution in 2007 was less compact than in 2004. During the crisis, the lowest values have maintained a relevant rate of growth, reducing the relative distance between the extreme values. Actually, the coefficient of variation has reported a negative rate of growth also during the crisis.

Considering the relationship between the value added and the loans granted by CCBs per macro-areas, it emerges that all areas have registered a reverse U-shaped pattern: loans granted by CCBs have increased also in 2009 when the value added was decreasing, confirming the figures above (Figure 9).

Figure 9

Relationship between the value added and the loans given by CCBs by Macro-area



Source: Bank of Italy and ISTAT.

4.4 Conclusion

Through the tools of descriptive statistics, this chapter has described heterogeneity among Italian CCBs and how these differences has been affected by the financial turmoil. From a general point of view, from 2004 to 2009 CCBs have increased in their structural variables. In the same period, CCBs have enlarged in their lending activity. Furthermore, CCBs kept increasing loans during the most acute phase of the crisis, too.

From statistics, CCBs have behaved differently according to the specific region in which they are settled and according to their size. Two main figures have emerged. First, the variability between and within groups was higher before the crisis. The financial turmoil has shrunk the CCBs' range of distribution of their structural variables, especially of those with a lower rate of growth. The turmoil acts as an equaling phenomenon.

Second, CCBs have shown a more polarized distribution during the crisis. On the one hand, largest CCBs have increased their growth rates very fast, reducing their costs and enlarging their business. On the other hand, smaller CCBs have grown at slower rates and have reduced the distances among each other. This dynamic is generalized among the macro-areas. Even though CCBs have turned to a more similar path of growth during the crisis, CCBs that were on a faster growth path have maintained this strategy determining a large gap with the remaining 75 per cent of CCBs in the sample.

According to these findings, it is difficult to treat CCBs as a homogenous group. Traditional CCBs, which have remained close to their business, have grown at a lower, even though steady rate. These CCBs have kept a small size, which allows them to base their business on relationship lending. The most well performing CCBs in the *large* and *major* groups seem to have switched to an aggressive growing path, less based on relationship lending. Their business is more related to transaction lending and their size is closer to the one of Banche Popolari or of small commercial banks. Their growth has been very fast at least until 2009. It is an open question to check whether this path is sustainable in the medium-long term.

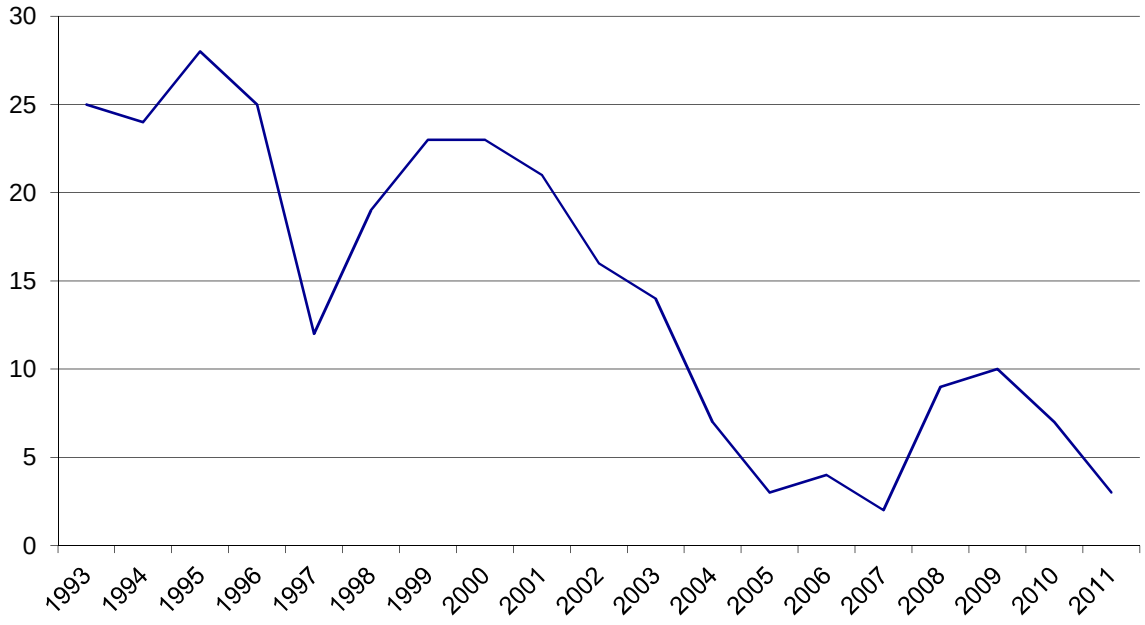
The most challenging case seems to be that of those CCBs, which were trying to reach a larger dimension before the crisis, but were still attached to a traditional cooperative business model. As far as the external conditions were favorable their growth was as good as the one of larger CCBs. However, when the turmoil started, their less capacity to base their business on techniques different from the relationship lending has challenged their path. At that point, their size was too big to come back to a traditional business model, but at the same time too small to compete with the more successful banks. For them the possible scenarios may be either to pursue a growing in size by merging with other CCBs or to rationalize their business.

Size and area seem to play a role in the performance of CCBs. In the next chapter, the efforts will be addressed in understanding how the size, which emerges from the previous analyses as discriminatory feature to describe the growth patterns, can impact on the growth of CCBs.

4.5 Appendix

Figure A 3

Mergers and acquisitions among Italian credit cooperative banks from 1993 till 2011
(Units)



Source: Bank of Italy, 2012

Table A 1

Credit Cooperative numbers, branches and number of M&A from 1993 till 2011

Year	CCBs	M&A	Branches
1993	665	25	n.a.
1994	642	24	2249
1995	618	28	2377
1996	591	25	2529
1997	583	12	2659
1998	563	19	2773
1999	531	23	2862
2000	499	23	2953
2001	474	21	3043
2002	461	16	3191
2003	445	14	3321
2004	439	7	3465
2005	439	3	3605
2006	436	4	3753
2007	440	2	3923
2008	432	9	4122
2009	421	10	4243
2010	415	7	4373
2011	411	3	4427

Source: Bank of Italy, 2012

Table A 2

Credit cooperative banks (1) (2)
(Average annual growth rates)

	2004 -2007						
	Total Assets	Members	Borrowing members	Employees	Branches	Reference area	Served population
Italy	9.27	7.12	7.29	4.36	5.06	3.53	4.91
C.C.B. ABRUZZO -MOLISE	7.90	2.11	3.33	2.97	4.54	-1.89	0.14
C.C.B. ALTO ADIGE	4.53	3.42	1.24	0.97	1.46	0.28	1.67
C.C.B. CALABRIA	8.15	6.75	8.30	9.03	5.05	4.79	2.52
C.C.B. CAMPANIA	7.61	5.95	6.16	4.26	5.13	4.14	5.10
C.C.B. EMILIA	9.63	9.06	9.61	5.12	5.20	3.93	4.13
C.C.B. FRIULI	7.30	6.93	9.49	2.57	3.76	3.58	3.35
C.C.B. LAZIO -UMBRIA -SARDEGNA	7.50	7.36	9.60	6.89	7.78	5.13	8.61
C.C.B. LOMBARDIA	9.73	8.78	10.68	2.95	5.71	5.12	6.90
C.C.B. MARCHE	11.22	6.81	6.40	6.89	6.98	5.33	5.44
C.C.B. PIEMONTE -VALLE D'AOSTA -LIGURIA	12.07	7.08	5.70	3.21	4.27	3.59	5.39
C.C.B. PUGLIA -BASILICATA	4.51	1.43	-0.08	3.41	3.38	2.41	1.75
C.C.B. SICILIA	4.83	0.86	1.66	1.61	3.78	3.38	4.30
C.C.B. TOSCANA	11.31	9.17	11.01	3.99	4.42	2.52	3.49
C.C.B. TRENTINO	7.63	6.81	3.49	4.33	3.11	3.67	5.86
C.C.B. VENETO	12.04	8.24	10.23	4.81	5.40	3.76	4.69
Major CCBs	13.27	8.30	7.42	4.50	6.07	3.90	6.08
Big CCBs	9.36	8.17	9.43	3.36	4.55	3.91	5.03
Medium CCBs	7.56	6.14	5.82	4.85	4.91	3.84	6.00
Small CCBs	6.15	3.09	3.04	3.95	3.36	1.80	2.62
First quartile	6.81	6.16	4.69	5.91	11.11	2.98	5.35
Median	6.64	7.35	7.14	5.57	5.56	3.71	3.53
Third Quartile	8.28	6.96	6.22	3.85	6.36	3.84	8.57
Stand. Deviation	11.80	8.76	10.04	3.49	5.11	3.38	3.52

(1) Data concerning total assets are corrected in the sense that CCBs that were involved in a M&A process between 2004 and 2009 have been considered as merged from the beginning of the period, so as to obtain homogeneous data over time. Moreover the analysis has excluded CCBs that were either born or dead (for reasons different from M&A) during the period of time considered because their information is not complete or may show outliers. - (2) Banca di Credito Cooperativo di Roma has been considered as an outlier and detached from the analysis.

2008-2009

	Total Assets	Members	Borrowing members	Employees	Branches	Reference area	Served population
Italy	2.86	8.25	7.46	5.39	5.92	6.15	3.39
C.C.B. ABRUZZO-MOLISE	5.72	1.75	6.24	4.49	5.99	4.30	8.46
C.C.B. ALTO ADIGE	3.17	4.06	1.79	2.49	2.45	1.36	1.88
C.C.B. CALABRIA	4.47	4.83	3.98	4.22	2.25	2.58	0.75
C.C.B. CAMPANIA	6.50	4.34	4.08	5.77	2.81	3.07	2.24
C.C.B. EMILIA	2.16	13.77	11.55	7.38	8.72	4.44	1.17
C.C.B. FRIULI	2.55	10.49	6.12	5.78	6.45	4.55	3.37
C.C.B. LAZIO-UMBRIA-SARDEGNA	6.39	2.76	3.80	4.58	6.44	6.27	1.57
C.C.B. LOMBARDIA	2.14	8.19	9.62	5.18	7.35	6.71	3.70
C.C.B. MARCHE	3.80	6.40	6.39	6.37	7.72	3.91	4.14
C.C.B. PIEMONTE-VALLE D'AOSTA-LIGURIA	2.89	19.51	17.48	12.55	13.14	10.72	12.00
C.C.B. PUGLIA-BASILICATA	6.44	3.78	1.56	4.84	4.59	4.60	2.67
C.C.B. SICILIA	6.00	6.94	9.67	8.52	11.62	7.00	6.43
C.C.B. TOSCANA	2.69	12.13	10.66	7.51	9.18	5.43	5.10
C.C.B. TRENTINO	3.52	5.53	1.83	2.68	1.89	0.53	0.04
C.C.B. VENETO	0.85	9.67	9.78	5.34	4.64	4.38	5.32
Major CCBs	2.03	9.80	9.59	4.62	7.01	3.91	3.47
Big CCBs	1.83	11.28	9.91	7.33	7.89	6.49	5.10
Medium CCBs	4.66	5.94	4.80	4.09	4.51	3.16	2.70
Small CCBs	5.32	3.99	5.46	6.56	5.37	2.69	2.94
First quartile	3.66	5.22	5.89	4.66	0.00	6.18	2.27
Median	4.60	5.56	3.94	6.19	7.14	5.29	2.11
Third Quartile	2.69	9.10	9.64	3.39	4.17	5.85	1.93
Stand. Deviation	1.53	13.02	11.87	6.01	7.66	10.31	3.47

Table A 3

Pair-wise comparison between average growth rates of Italian CCBs by Regions

(Values for the two-side t-test)

		Average growth rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2005																	
1	B.C.C. PIEMONTE-VALLE D'AOSTA-LIGURIA	8,4	.	0,554	0,000	0,246	0,000	0,572	0,001	0,051	0,000	0,002	0,602	0,014	0,064	0,290	0,052
2	B.C.C. LOMBARDIA	9,2	0,768	.	0,005	0,000	0,345	0,017	0,182	0,318	0,046	0,020	0,466	0,486	0,231	0,768	0,766
3	B.C.C. TRENTINO	11,6	0,235	0,064	.	0,057	0,001	0,293	0,003	0,084	0,000	0,004	0,824	0,039	0,089	0,458	0,116
4	B.C.C. ALTO ADIGE	7,3	0,656	0,140	0,000	.	0,000	0,846	0,000	0,022	0,000	0,001	0,337	0,003	0,037	0,129	0,013
5	B.C.C. VENETO	12,5	0,142	0,014	0,314	0,000	.	0,000	0,505	0,462	0,190	0,034	0,297	0,853	0,308	0,512	0,871
6	B.C.C. FRIULI	7,6	0,739	0,210	0,000	0,767	0,000	.	0,000	0,028	0,000	0,001	0,395	0,004	0,043	0,160	0,019
7	B.C.C. EMILIA	13,3	0,085	0,003	0,051	0,000	0,361	0,002	.	0,632	0,547	0,056	0,182	0,754	0,399	0,319	0,545
8	B.C.C. TOSCANA	14,9	0,032	0,000	0,000	0,000	0,012	0,000	0,221	.	0,445	0,127	0,067	0,223	0,609	0,110	0,160
9	B.C.C. MARCHE	14,0	0,055	0,001	0,007	0,000	0,101	0,001	0,585	0,788	.	0,081	0,119	0,473	0,486	0,205	0,336
10	B.C.C. LAZIO-UMBRIA-SARDEGNA	20,6	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,082	0,000	.	0,001	0,000	0,465	0,001	0,000
11	B.C.C. ABRUZZO-MOLISE	9,8	0,610	0,662	0,030	0,015	0,004	0,164	0,008	0,118	0,001	0,006	.	0,078	0,112	0,614	0,198
12	B.C.C. CAMPANIA	12,8	0,117	0,008	0,173	0,015	0,733	0,004	0,674	0,522	0,292	0,041	0,249	.	0,340	0,433	0,744
13	B.C.C. PUGLIA-BASILICATA	17,2	0,007	0,000	0,000	0,000	0,000	0,000	0,004	0,466	0,009	0,362	0,013	0,014	.	0,015	0,012
14	B.C.C. CALABRIA	11,0	0,344	0,181	0,412	0,001	0,091	0,040	0,065	0,227	0,013	0,013	0,643	0,270	0,179	.	0,503
15	B.C.C. SICILIA	12,2	0,170	0,025	0,513	0,000	0,738	0,008	0,366	0,408	0,119	0,029	0,350	0,714	0,279	0,596	.
2007																	
1	B.C.C. PIEMONTE-VALLE D'AOSTA-LIGURIA	12,4	.	0,242	0,041	0,000	0,810	0,141	0,944	0,048	0,297	0,001	0,095	0,796	0,337	0,003	0,021
2	B.C.C. LOMBARDIA	13,4	0,746	.	0,003	0,000	0,458	0,020	0,501	0,230	0,602	0,840	0,647	0,489	0,117	0,001	0,007
3	B.C.C. TRENTINO	10,5	0,524	0,001	.	0,000	0,033	0,582	0,131	0,001	0,045	0,559	0,837	0,544	0,773	0,024	0,148
4	B.C.C. ALTO ADIGE	2,3	0,006	0,000	0,000	.	0,000	0,000	0,000	0,000	0,000	0,577	0,098	0,000	0,000	0,074	0,010
5	B.C.C. VENETO	12,7	0,937	0,376	0,023	0,000	.	0,090	0,911	0,074	0,359	0,001	0,000	0,715	0,267	0,002	0,016
6	B.C.C. FRIULI	11,0	0,638	0,006	0,580	0,000	0,099	.	0,254	0,003	0,078	0,768	0,766	0,705	0,965	0,014	0,092
7	B.C.C. EMILIA	12,5	0,976	0,289	0,033	0,000	0,882	0,119	.	0,057	0,320	0,721	0,173	0,765	0,309	0,003	0,019
8	B.C.C. TOSCANA	14,8	0,429	0,087	0,000	0,000	0,033	0,001	0,085	.	0,788	0,812	0,692	0,189	0,016	0,000	0,001
9	B.C.C. MARCHE	14,3	0,526	0,254	0,000	0,000	0,094	0,003	0,169	0,680	.	0,255	0,251	0,268	0,034	0,000	0,002
10	B.C.C. LAZIO-UMBRIA-SARDEGNA	11,9	0,864	0,077	0,130	0,000	0,449	0,336	0,644	0,018	0,002	.	0,401	0,978	0,53	0,005	0,037
11	B.C.C. ABRUZZO-MOLISE	13,1	0,822	0,717	0,007	0,000	0,660	0,037	0,656	0,149	0,191	0,341	.	0,576	0,167	0,001	0,010
12	B.C.C. CAMPANIA	11,9	0,848	0,066	0,147	0,000	0,413	0,369	0,610	0,016	0,494	0,641	0,402	.	0,553	0,006	0,039
13	B.C.C. PUGLIA-BASILICATA	11,0	0,622	0,005	0,631	0,000	0,087	0,941	0,234	0,002	0,180	0,980	0,161	0,682	.	0,015	0,098
14	B.C.C. CALABRIA	5,9	0,047	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,073	0,701	0,000	0,011	0,002	.	0,359
15	B.C.C. SICILIA	7,7	0,130	0,000	0,003	0,000	0,000	0,002	0,001	0,000	0,000	0,020	0,003	0,065	0,035	0,352	.
2009																	
1	B.C.C. PIEMONTE-VALLE D'AOSTA-LIGURIA	14,4	.	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,029	0,029	0,001	0,032	0,018	0,003
2	B.C.C. LOMBARDIA	5,2	0,000	.	0,206	0,001	0,527	0,219	0,691	0,016	0,414	0,000	0,817	0,021	0,019	0,066	0,026
3	B.C.C. TRENTINO	4,3	0,000	0,379	.	0,009	0,167	0,059	0,213	0,004	0,152	0,000	0,635	0,006	0,007	0,030	0,008
4	B.C.C. ALTO ADIGE	2,1	0,000	0,002	0,001	.	0,001	0,001	0,001	0,000	0,004	0,000	0,269	0,000	0,000	0,003	0,000
5	B.C.C. VENETO	5,8	0,000	0,465	0,023	0,000	.	0,527	0,747	0,044	0,776	0,000	0,977	0,059	0,041	0,123	0,063
6	B.C.C. FRIULI	6,6	0,000	0,144	0,001	0,000	0,520	.	0,297	0,110	0,793	0,001	0,858	0,149	0,086	0,220	0,144
7	B.C.C. EMILIA	5,5	0,000	0,686	0,068	0,000	0,776	0,365	.	0	0,600	0,000	0,905	0,038	0,029	0,094	0,043
8	B.C.C. TOSCANA	9,1	0,002	0,000	0,000	0,000	0,004	0,033	0,001	.	0,034	0,073	0,361	0,743	0,648	0,996	0,923
9	B.C.C. MARCHE	6,2	0,000	0,266	0,006	0,000	0,737	0,760	0,483	0,072	.	0,000	0,937	0,097	0,061	0,168	0,098
10	B.C.C. LAZIO-UMBRIA-SARDEGNA	11,5	0,046	0,000	0,000	0,000	0,000	0,001	0,000	0,140	0,001	.	0,126	0,057	0,456	0,256	0,128
11	B.C.C. ABRUZZO-MOLISE	5,9	0,000	0,405	0,016	0,000	0,929	0,584	0,672	0,050	0,834	0,000	.	0,067	0,046	0,134	0,071
12	B.C.C. CAMPANIA	8,7	0,001	0,001	0,000	0,000	0,013	0,073	0,003	0,767	0,070	0,034	0,433	.	0,489	0,822	0,848
13	B.C.C. PUGLIA-BASILICATA	10,0	0,007	0,000	0,000	0,000	0,000	0,007	0,000	0,570	0,008	0,258	0,25	0,343	.	0,659	0,516
14	B.C.C. CALABRIA	9,1	0,002	0,000	0,000	0,000	0,005	0,033	0,001	0,997	0,034	0,073	0,362	0,747	0,646	.	0,926
15	B.C.C. SICILIA	9,0	0,002	0,000	0,000	0,000	0,007	0,043	0,002	0,921	0,044	0,057	0,384	0,827	0,592	0,942	.

Source: Bank of Italy

Table A 4

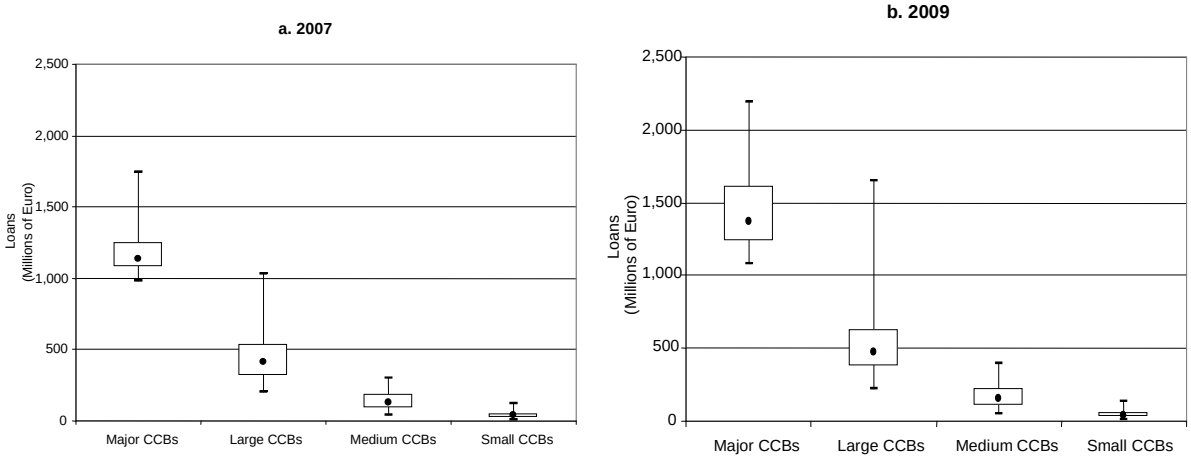
Pair-wise comparison between average growth rates of Italian CCBs by Size
(Values for the two-side t-test)

	Average growth rate	Major	Large	Medium	Small
2005					
Major	13,1	.	0,231	0,025	0,469
Large	11,1	0,122	.	0,277	0,000
Medium	11,7	0,286	0,368	.	0,000
Small	14,8	0,199	0,000	0,000	.
2007					
Major	16,6	.	0,000	0,000	0,000
Large	12,4	0,008	.	0,002	0,000
Medium	10,5	0,001	0,004	.	0,003
Small	7,8	0,000	0,000	0,000	.
2009					
Major	6,2	.	0,074	0,048	0,082
Large	5,2	0,560	.	0,000	0,009
Medium	7,2	0,550	0,000	.	0,041
Small	8,0	0,270	0,000	0,082	.

Source: Bank of Italy

Figure A 4

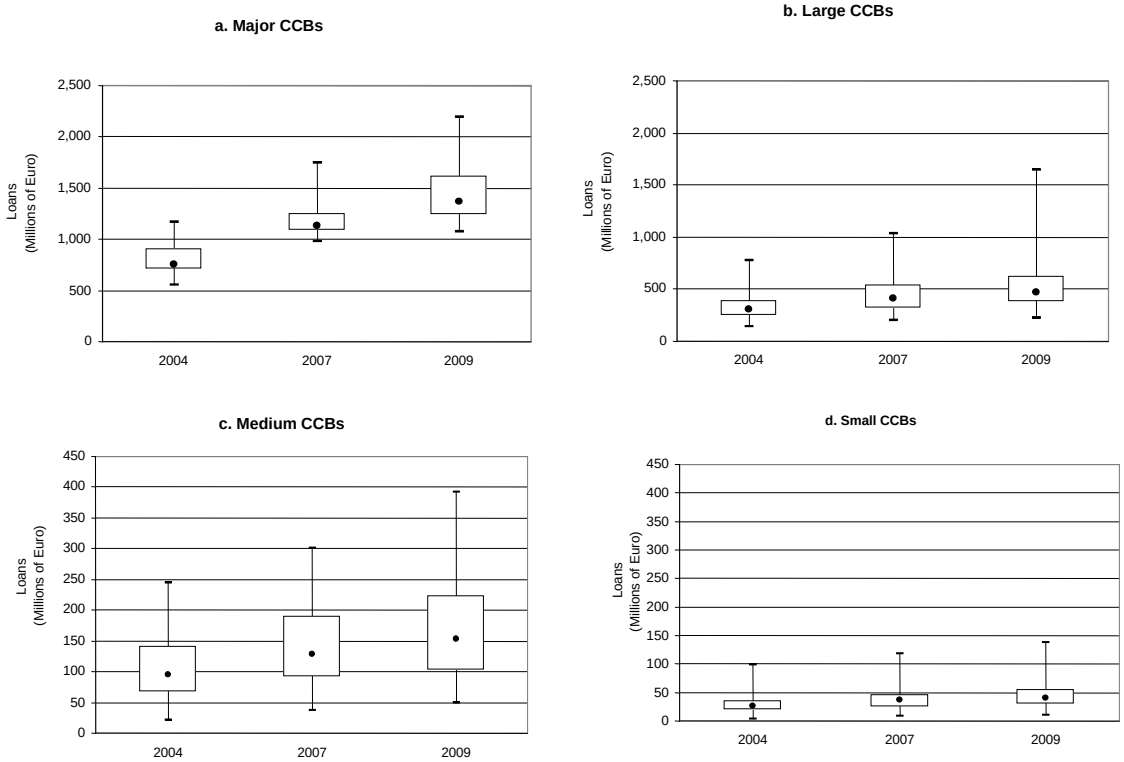
Loans by size – a Between Analysis



Source: Bank of Italy

Figure A 5

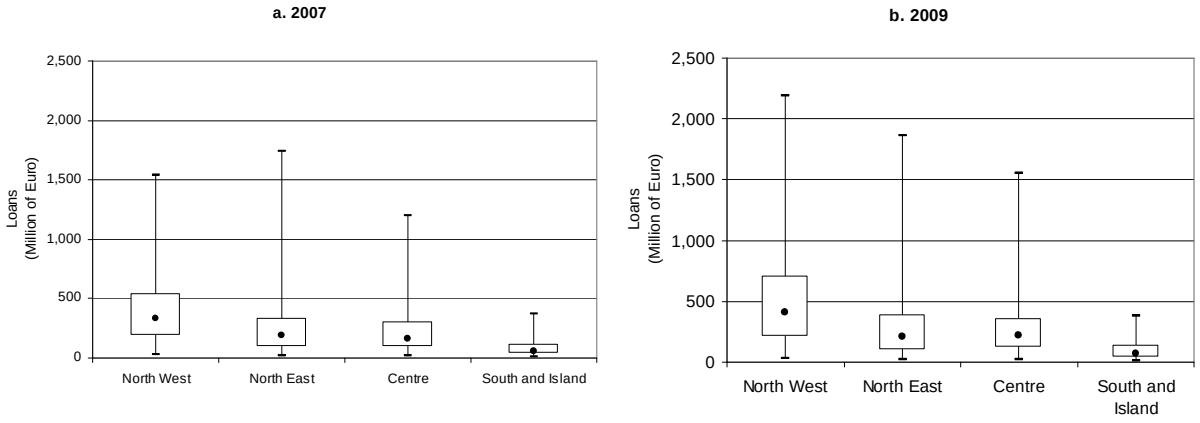
Loans by size – a Within Analysis



Source: Bank of Italy

Figure A 6

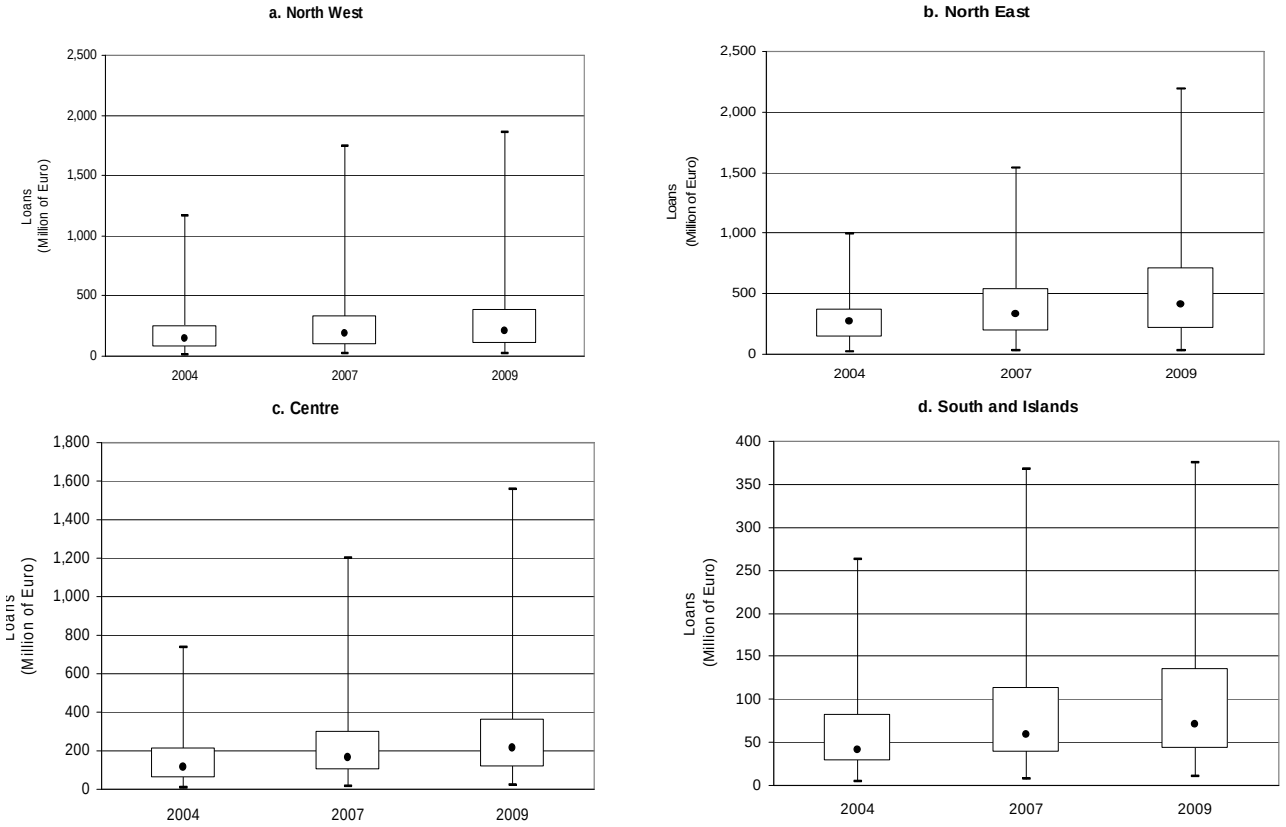
Loans by Macro-area – a Between Analysis



Source: Bank of Italy

Figure A 7

Loans by Macro area– a Within Analysis



Source: Bank of Italy

5 How much and for how long? The growth of Italian credit cooperative banks from 2004 to 2009[45]

5.1 Introduction

The aim of this chapter is to investigate the cause and the dynamics of the growth of loans, total assets and members for the sample of Italian CCBs in the period 2004-2009. The literature concerning the growth of banks has stressed the role of size. According to some authors, large banks are more likely to enlarge their business thanks to their capacity to be efficient and to exploit scale economies (Berger et al. 1993, 1997, 1999). The derived scenario will be characterized by few larger dominating banks. According to this view, the geographical limitations that still characterized Italian CCBs are inefficient rules, which oblige CCBs to maintain smaller dimensions. However, evidences concerning the Italian banking industry after the liberalization have shown that small banks have not only experienced unexpected growth but also managed to expand their businesses more rapidly than their larger competitors. These results have occurred despite some characteristics of small banks—such as localism, small and medium firms as privileged clients, and legal constraints—that could have left them to a marginal role, due to their limited capacity to exploit economies of scale, their need for costly techniques to manage risk in an era of overall consolidation, their regulatory context, and to the expansion of information and communication technologies.

Taking as an example CCBs, they are nowadays less in numerous but in bigger in size, compared with the pre-deregulation period. Thus, size per se may not be enough in assessing the performance, and it will be necessary to look for other explanation. CCBs are a good test to check whether size has a role in explaining their growth. Thus, the question that arises is whatever the size of these banks may have an impact on their growth. If not, which may be other elements that explain their growth?

A way to answer the first question is to determine whenever Italian CCBs have grown accordingly to the Law of Proportionate Effect (LPE) stated by Gibrat in 1931. Following this law, firm size and growth are unrelated. Large and small banks may grow at any given rate in any particular period (Benito, 2008). In order to identify the growth-size relationship, a test based on a fixed effect estimator will be implemented through the panel unit root test as defined by Breitung and Meyer (1994). Factors, which may influence the growth, such as demand, innovation, organizational structure, and good management, are assumed to be randomly distributed among

[45] Joint chapter written together Maria Lucia Stefani (Bank of Italy, Trento branch, Italy). The opinions expressed in this paper are those of the authors and do not involve the responsibility of the Bank of Italy.

banks (Wilson and Williams, 2000).

The chapter is organized as follows: Section 2 reviews the relevant literature; Section 3 presents possible determinants of growth; Section 4 discusses the methodology and data; Section 5 presents the results; and Section 6 discusses some concluding remarks.

5.2 Literature Review

The process of banks' growth (in loans or total assets) has been usually related with the search of economies of scale thanks to which banks may be more efficient and may obtain advantages over the others by enlarging their size. The M&A wave that followed the liberalization in Europe at the beginning of the 90s was aimed by this idea. However, it could be the case that growth is not related to the characteristics of the banks. The assumption in this case is that growth behaves as a random variable distributed among banks. According to this view, systematic factors, such as the size, do not play a differentiating role, and do not affect the growth path. The hypothesis is that banks can either grow or not, but there is no way to systematically interpret the dynamic. The idea originally stated by Gibrat (1931) has been embodied in the Law of Proportionate Effects (LPE) according to which size and growth are not related.

In the literature the validity of the LPE has been tested for various industries and countries. In the 60s, studies concerning the manufacturing firms in UK and U.S. have found little support for the relationship between growth and size (Hart and Prais, 1956; Hart, 1962; Hymer and Pashigian, 1962). Later studies have given mixed results: for the manufacturing in U.S., Mansfield (1972) has found a negative relationship, while Singh and Whittington (1975) have described an opposite scenario for the UK. Recently, it seems that authors agreed on a negative relationship between size and growth, by which smaller firms grow faster compared to larger one (Goddard et al, 2002). Fagiolo and Luzzi (2006) have found similar results also for the Italian firms.

A few studies have investigated the growth-size relationship in the banking industry. The pioneers in this strand of literature are Alhadeff and Alhadeff (1964) together with Rhoades and Yeats (1974). The former have found that smaller banks in the U.S. tended to grow faster than larger banks from 1930 to 1960. The latest have similar conclusions analyzing a different period: according to their studies in the decade from 1960 to 1971 larger banks have tended to grow more slowly than smaller banks. In order to deeper investigate this issue; Tschoegel (1983) has translated the LPE in three testable propositions:

1. Growth rates are independent of firm size;
2. Above or below average growth for any individual firm does not tend to persist from one period to the next;

3. The variability of growth is independent of firm size.

Tschoegel has tested the LPE on a sample of world's largest banks in the period from 1969 to 1977. In this case, results support the idea that growth is independent from size. Moreover, he has underlined that (i) the relation with the previous period has been positive but not significant and that (ii) the growth rate variability has declined with the bank's size. The most recent papers have introduced a relevant advancement in assigning the validity of the LPE. Parallel to the cross-sectional regressions, authors such as Wilson and WiIliams (2000), Goddard et al. (2002) and Benito (2008) have introduced panel techniques to fully exploit the information available. As Goddard et al (2002) have underlined there are econometric reasons to prefer panel estimation to the cross-sectional one: cross-sectional estimator may be biased towards LPE acceptance and there will be loss of power in the test if data suffer from heterogeneous individual bank effects. Thanks to this methodology, Wilson and WiIliams (2000) have found no relationship between size and assets growth for France, Germany and U.K., while in Italy smaller banks have grown faster than larger banks over the period 1990-1996, a period across the liberalization. Furthermore, smaller banks have experienced more variability in their growth rate compared to larger banks. Goddard et al. (2002) have investigated the growth of U.S. credit unions in the 1990s. They have rejected the LPE, underlining how this test is not exhaustive. U.S. smaller credit unions have grown slower and with a more variable rate compared to the larger credit unions. Goddard et al. (2004), comparing data on different type of banks—i.e. commercial, savings and cooperative, in France, Germany, Italy, Spain and UK from 1992 to 1998 have found support for the LPE, even though they have discovered positive persistence in the growth rate. Benito (2008) studying the Spanish case has concluded that larger banks in the sample have grown slower than smaller banks, at least in terms of assets and deposits measures. Control variables are usually added in order to better assess the relationship.

5.3 Determinants of the growth

The growth of CCBs has usually been analyzed through the growth of three indicators: loans, total assets and total membership. It is difficult to identify the variables, which at best describe the objectives of the cooperative banks mission, since they do not maximize profits. The creation of both economic and social value for the members and for the local community is a fundamental part of their objective functions, as specified in their statutes. However, the heterogeneity of members, increased after the liberalization, may create some frictions in the functioning of the bank. As Barron (1992) has underlined, the priority has been more often given to the provisions of loans, hence to member-as-borrowers. In this respect, loans, but assets as well, may be taken as good measure to investigate the growth of CCBs. As an alternative measure to describe growth, the

membership may also be investigated as suggested by Goddard et al. (2002). Even though the enlargement in the membership is not explicitly mentioned as a goal for CCBs, it is an important element of the sustainability of the bank.

As underlined in the previous chapter, Italian CCBs are a heterogeneous group of banks which differences are deepen by size[46]. The financial turmoil had a strong impact on the magnitude of such differences, in some cases softening them, in others reinforcing them. Recalling some relevant figures, the membership, which has yearly increased by 8.8 per cent from 2004 to 2009, has grown faster in *large* and *major* CCBs compared to *small* ones. Loans have grown by 12.7 per cent annually in the period 2004-2009. However, in 2009 the average value of loans for *major* CCBs was almost three times the loans of *large* CCBs, which have shown an average growth rate in the period 2007-2009 equal to 9.8 per cent. Before the crisis the enlargement of the market share for *major* CCBs has occurred at the expense of *large* and *medium* CCBs, while, during the crisis, it was the market share of *small* CCBs that decreased the most. Finally, total assets have registered the lowest yearly growth rate with a value of 7.6 per cent. In 2007, *medium* CCBs have registered a slight reduction in the quota of total assets, while *major* CCBs have reported a large and growing share. During the crisis, however, *medium* and *small* CCBs have better performed by gaining the quotas lost by major and *large* CCBs.

The growth of CCBs may be affected by various variables, other than size. Barron et al. (1994) argued that older organizations are less able to compete with incumbent. From this perspective, younger organization will be more dynamics and innovative. However, Goddard et al (2002) have underlined how older organization may exploit their experience and join a better network. Moreover, it may give the idea of a solid institution. According to (Focarelli et al., 2002), Italian banks have pursued M&A to reach two main objectives: (i) expanding the revenues and increase the profitability, and (ii) improving the loan portfolio, while economies of scale have not emerged as an explanation. However, since the technique used in this chapter involves the fixed effects estimator that accounts only for time varying variables. For this reason, the effects of both seniority and M&A, variables that do not vary over time, will not be explicitly given.

The saturation of the local market, identified as the number of members over the population, is one of the structural determinants of the growth. The reduction of the potential member slows the enlargement of the membership (Goddard et al., 2002; Jones and Kalmi, 2012), even though it may have a positive impact on the amount of total assets and loans. Furthermore, CCBs, being local

[46] In this chapter as well have been divided into four groups (cfr. Footnote 40). Banca di Credito Cooperativo di Roma, which is much bigger than other CCBs, has been considered as an outlier and therefore it has not been considered in the statistical analysis.

banks, are strictly linked with their reference area. The geographical expansion of these banks is important in order to understand their patterns of growth. Here, the geographical influence has been measured as the "width in km squared of the reference area".

Together with these more structural variables, variables of performance might be crucial. Higher returns on assets should be positively related with a higher growth of banks. However, given the cooperative aim of these banks, this relation is not straightforward. Since the goal of the CCBs is not the profit per se, but may be a larger market share, the ROA may show a negative sign. The capital-to-assets ratio, which describes the riskiness of the bank, has usually shown a high value for the Italian CCBs. The solid capital may help in sustaining the growth of the total assets. However, it has to be remembered that Italian CCBs have to allocate the 70 per cent of the net profit to reserve, which reduces the possibility of investments. Goddard at al. (2002) has estimated a positive relation between the capital ratio and the growth of both total assets and membership. The cost-income measure refers to the level of efficiency, and it is expected to have a negative impact on growth. Finally, a higher amount of non-performing loans may imply that the bank has taken to many risks maybe due to the hurry of expanding its business. The incapacity of the manager to evaluate the lending risks may thus lower the growth of the bank.

Finally, the growth of loans and assets may be driven by the economic needs of the area. The growth rate of the GDP in the region may be argued to have a positive impact on the growth of assets and loans. The attractively of CCBs, defined through a proxy for the interest rates on loans and on deposits, may also be a determinant of their growth. The growth of loans should be negatively related with their costs, while the growth of members should be positively related with the interest rates on deposits. In order to determine this relation, the average earnings on loans and the average cost of deposit will be taken as proxies for the two interest rates.

5.4 Data and methodology

The dataset is built on the information collected through the Bank of Italy database[47]. The information refers to annual data over the period 2004-2009 regarding 411 Italian CCBs. Ten CCBs for which data were not available in continuous form throughout the sample period were eliminated from the sample. Such cases include banks that have born or failed in the period analyzed. Moreover, the database identifies surviving CCBs that were involved in mergers with other CCBs at any point during the sample period: in this case banks have been considered already merged at the

[47] The database collects data from the Bank of Italy's Supervisory Reports. Data concerning the age of banks are from Bank of Italy's Census archive on Italian banks.

beginning of the period through the summation of their values[48]. The final result is a balanced panel that includes data regarding the balance sheet of CCBs, their structural figures, demand size variables and geographical controls. CCBs have been grouped by size according to the amount of their assets in 2007. Since the Bank of Italy official classification considers CCBs as part of the so-called "minor banks" group, an ad hoc classification has been introduced using as thresholds to identify groups the quartile divisions (Footnote 40).

Table 6 shows summary data (mean and standard deviations) of the variables that will be taken as dependent for the purposes of this chapter—i.e., total assets, loans, and number of members. Considering the growth rate of total assets, it seems that larger CCBs have been growing faster until 2007, while, during the turmoil, *small* CCBs have performed slightly better. Less clear is the path followed by the growth rate of loans. Larger CCBs have registered the highest rate of growth until 2009, when the four dimensional groups of banks have increased by almost the same rate. Smaller CCBs have reduced their growth rate over time in a more smoothed way compared to larger banks. Finally, considering the growth rate of members, larger CCBs have registered a faster growth rate compared to smaller banks. This rate has remained stable through the analyzed period.

Table 6

Descriptive Statistics

	2004		2005		2006		2007		2008		2009	
	Mean	S.D.	**Mean**	S.D.	**Mean**	S.D.	**Mean**	S.D.	**Mean**	S.D.	**Mean**	S.D.
Total Assets (blns)	**124,77**	0,30	**135,98**	0,33	**148,56**	0,37	**162,79**	0,42	**159,44**	0,40	**171,85**	0,43
Growth rate	-		8,99		9,25		9,58		- 2,06		7,78	
Major	-		0.10		0.13		0.13		-0.03		0.07	
Large	-		0.09		0.09		0.09		-0.03		0.07	
Medium	-		0.08		0.07		0.07		0.01		0.08	
Small	-		0.09		0.05		0.05		0.02		0.09	
Loans (mlns)	**174,02**	183,15	**193,11**	204,14	**214,73**	230,23	**241,39**	266,55	**269,58**	305,96	**285,26**	322,17
Growth rate	-		10,97		11,19		12,42		11,68		5,82	
Major	-		0.12		0.14		0.15		0.12		0.07	
Large	-		0.10		0.10		0.11		0.11		0.06	
Medium	-		0.11		0.10		0.10		0.10		0.08	
Small	-		0.12		0.09		0.07		0.08		0.08	
Members	**1 656**	1 576	**1 773**	1 700	**1 897**	1 856	**2 036**	2 027	**2 196**	2 314	**2 386**	2 589
Growth rate	-		7,05		6,98		7,32		7,88		8,62	
Major	-		0.09		0.08		0.09		0.08		0.09	
Large	-		0.07		0.07		0.08		0.06		0.06	
Medium	-		0.05		0.04		0.05		0.05		0.04	
Small	-		0.03		0.03		0.02		0.02		0.02	

Source: Bank of Italy

In order to test the LPE, namely the absence of relation between growth and size, on the growth of the loans, the total assets and the members of Italian CCBs, the econometric analysis will

[48] This technique could have resulted in some biasness. In fact, while it is worthily to sum the value of CCBs' total assets, the summation of variables such as the reference area or the number of members is more challenging given the fact that this variable could be overlapping for the merging banks. However, it is difficult to detach this problem. For this reason, it seems that artificially impose the merging through the summation of CCBs variables is the best strategy to follow.

be based on both a univariate and a multivariate model estimated thorough a fixed effect estimators.

The univariate model

The base model is a stochastic model of the following form:

$$S_{it} = S_{it-1}^{\beta} \exp(\mu_{it}) \quad \textbf{(1)}$$

where S_{it} is the size of the banks *i* at time *t*, β is the parameter of the size effect, and μ_{it} is bank *i*'s taken from the common distribution of growth rates, and it is assumed to have a normal distribution with mean $\alpha_i+\delta_i$ and variance σ^2. The logarithmic form of equation (1) can be rearranged in the stochastic growth model, which considered the growth and the size of the bank:

$$s_{it} - s_{i,t-1} = \alpha_i + \delta_t + (\beta - 1)s_{i,t-1} + u_{it} \quad \textbf{(2)}$$

$$u_{it} = \rho u_{i,t-1} + \varepsilon_{it} \quad \textbf{(3)}$$

where s_{it} is the log of the bank's size at each time, α_i and δ_i describe individual and time effects respectively, while the parameter β accounts for the relationship between size and annual growth. u_{it} is the term of error, normal and IDD, with $E(u_{it})=0$ and $var(u_{it})>0$ (Benito, 2008). The error term may be serially auto correlated through ρ. As immediately clear, equation (2) is a first order autoregressive model for s_{it}. In order to take account of the serial autocorrelation, equation (2) may be written as:

$$s_{it} - s_{i,t-1} = \alpha_i + \delta_t + (\beta - 1)s_{i,t-1} + \rho u_{i,t-1} + \varepsilon_{it} \quad \textbf{(4)}$$

In order to test the hypothesis about β, it is required the assumption that the specific bank effects are homogenous—i.e. $E(\alpha_i)=0$ and $\sigma^2_{\alpha} = 0$, such that the individual effects are identical. However, if the banks show heterogeneous effects, $\sigma^2_{\alpha} > 0$, the estimation of β is upward biased and inconsistent, and the test for LPE will lose power. The cross-sectional model can be obtained by re-parameterizing equation (4):

$$s_{i,t} - s_{i,t-1} = a_i + (b-1)s_{i1} + r(s_{i1} - s_{i0}) + v_{it} \quad \textbf{(5)}$$

where $b=\beta^t$ and a_i, r and v_{it} are the transformation of α_i, ρ and ε_{it}, respectively. As suggested by Tschoegel (1983), $u_{i,t-1}$ has been rewritten in terms of s_{i1} and s_{i0} for the OLS estimation. Once again, in order for equation (5) to be stable, it is necessary to impose homogeneity in α_i; otherwise the number of parameters N+2 will exceed the number of observations.

Recently, authors have included the panel estimation technique to find support for the LPE. The panel technique allows testing LPE without imposing assumptions on α_i. Equation (2) can be written as following:

$$s_{it} - s_{i,t-1} = \alpha_i(1-\rho) + \delta_t + (\beta-1)s_{i,t-1} + \rho(s_{i,t-1} - s_{i,t-2}) + \eta_{it} \quad \textbf{(6)}$$

$$\eta_{it} = \varepsilon_{it} + \rho(1-\beta)s_{i,t-2} \quad \textbf{(7)}$$

Equation (6) does not present problems in testing the LPE since under H_0: β=1 the error term specified in equation (7) turns to be $\eta_{it}=\varepsilon_{it}$. The panel estimation through fixed effects, which fully exploits the information in the dataset, will return a value of β downward biased and the sampling distribution of its t-statistic will be non-standard. The alternative model suggested by Breitung and Meyer[49] (1994) proceeds by deducting the first observation (s_{i0}) for each individual observation in the right hand-side of equation (6) and by incorporating the individual effects $\alpha_i(1-\rho)$ in the error term η_{it}. The resulting model has the following form:

$$s_{it} - s_{i,t-1} = \delta_t + (\beta-1)(s_{i,t-1} - s_{i0}) + \rho(s_{i,t-1} - s_{i,t-2}) + \zeta_{it} \quad \textbf{(8)}$$

$$\zeta_{it} = \eta_{it} + \alpha_i(1-\rho) + (\beta-1)s_{i0} \quad \textbf{(9)}$$

This model is not affected by heterogeneity of α_i. The fixed effect model will be estimated for *i*=1…411 and *t*=2005…2009.

The multivariate model

Sometime the univariate model is not able to "tell the entire story". Other variables are required to better explain the growth rate of CCBs. That is the reason why many authors have introduced either a multivariate model (Goddard et al., 2002; Goddard et al. 2004) or dummies variables to control for countries and banks typologies (Tschogoel, 1983; Benito, 2008; Wilson and Williams, 2010). The multivariate model in this case will be an extension of the univariate model, estimated through fixed effect method. Independent variables and controls will be added on the right-hand side of equation (5) and (6). The panel model will take the following form:

$$s_{it} - s_{i,t-1} = \alpha_i(1-\rho) + \delta_t + (\beta-1)s_{i,t-1} + \rho(s_{i,t-1} - s_{i,t-2}) + \gamma_1' x_i + \gamma_2' z_{it} + \eta_{it} \quad \textbf{(10)}$$

where x_i is the vector of the time-invariant variables, z_{it} is the vector of the time-variant variables; $\bar{z}_i$ is the mean value of z_{it} over time and g_1, g_2, Υ_1 and Υ_2 are the coefficient's vectors. Equation (10) is estimated for *i*=1…411 and *t*=2005…2009.

[49] "The Breitug-Meyer panel estimator in unbiased under H_0: â=1, while the t-statistic on $\hat{\beta}-1$ is asymptotically normal. If $\hat{\alpha}<1$. $\hat{\beta}$ is upward biased because of the presence of (â-1) s_{i0} in ξ_{it} Breitung-Meyer (2004) show that the bias is â+(1-â)/2." Goddard et al. (2002: 2338).

The hypothesis tests

The first step is to check Tscoegel (1983: 187) first testable hypothesis:

P(1): The growth rate of each bank is independent of its size.

The test suggested by Goddard et al. (2002) takes into account the value of β. If β=1, the coefficient for the log of the size at the beginning of the analyzed period is equal to 0 the LPE is accepted. The size in t-1 has not affected the growth of the bank at t. For β≠1, the LPE may not be accepted. In particular, β<1 implies negative relation between size and growth since the coefficient of $s_{i,t-1}$ turns negative. The interpretation suggested is that smaller banks tend on average to grow faster than larger banks. On the contrary, when β>1 larger banks have grown more quickly than smaller banks, consistently with the advantages given by economies of scale or with the increase in banks size.

The second hypothesis to be tested is:

P(2): There is no persistence in bank's growth in two consecutive periods.

The test for P(2) is based on the value of ρ. Whenever ρ is equal to 0; the rate of growth in the previous period is not affecting the current growth, giving supports to the hypothesis of non-persistence growth. However, if ρ>0, then an above (or below) average growth in the previous period tend to be repeated in the current period. On the contrary, if ρ<0, an above (below) average in the previous tends to lead to below (above) growth in the current period.

Finally, the third hypothesis states:

P(3): The variability of growth rate is independent of the bank's size.

In this case, σ_{it} will be analyzed. Low variability, or homoscedastic variance, may be explained through the reduced uncertainty given by diversification or scale advantages. On the contrary, in case of heteroscedasticity, these advantages have to be interpreted as related to the bank's size. The dispersion could be positively or negatively related to the bank's size. An auxiliary regression on the squared residual on the predicted squared lagged size value will determine the direction of this relation. The variability in the growth rate of banks is per se relevant also for policy issue and safety net (Benito, 2008).

5.5 Empirical Results

Univariate test of the LPE

Table 7 presents the results for the univariate estimations based on model (8) for panel regression[50]. The estimation has been run for the full period and for two separated sub-periods: before the financial turmoil from 2004 to 2007 and during the financial turmoil, from 2008 till 2009. The values of both β and ρ are reported for the growth rates of the total assets, the loans and the membership.

The H_0: β=0 is rejected in favour of a negative and significant sign for the three dependent variables. Thus, smaller CCBs have grown faster than larger. The coefficients are not only significant, but also with large values. The negative size-growth relationship is stronger for assets, followed by membership while loans have registered a smaller value. Following the interpretation given by Goddard at al. (2002), the advantages of smaller CCBs seem to derive more from their capability to increase business with the existing members than to attract new ones. Moreover, given the larger coefficient registered for the total assets, smaller banks seem to be more attractive for depositors than for borrowers. When the overall period is divided in two, the results are slightly different. Smaller CCBs have increased loans at a higher rate compared to one of assets during the crisis. This could be due to the increasing needs of loans during the turmoil, while the growth of assets has slowed down.

The estimations for the ρ coefficients has shown that on average, CCBs that have achieved an above-average growth in one period have grown more slowly in the next. This is verified for all variables in all periods, expect for loans considering the overall period. In the case of loans, CCBs that are not growing in one period are not growing in the next too. The reason could be found in the liquidity constraint, which cannot be easily solved from one year to the next.

In the literature, results are mixed. Benito (2008) found a positive relationship for assets and loans, and a negative one for deposits. In this case, the author has performed both OLS and Breitung-Meyer unit root tests. Focusing on the other dependant variables, Goodard et al. (2002) have found a negative coefficient for the growth of both assets and members for the U.S. credit unions in the period 1990-1999. In a second paper, Goddard at al. (2004) have estimated a positive and significant value for the European cooperative banks in the period 1992-1998, and a positive but not significant coefficient for Italy. Wilson and Williams (2010) have registered a negative but not significant ρ for the Italian banking sector. The negative persistence of growth has been

[50] In order to check the robustness of the results, the analyses have been performed using a pooled OLS estimator too. Results are nor reposrted

explained by Goddard et al. (2002) through the capital constraint imposed to credit unions by the regulator for the U.S. case. A similar explanation can apply to the Italian CCBs. The fast growth in one period needs to be consolidated in the next, with a consequent reduction in the growth rate. However, the strong reduction registered in the assets coefficient in 2008-2009 can be easily related to the financial turmoil, which has impacted immediately on assets reducing their growth.

Concerning the third hypothesis, the FE estimation[51] has shown that the variability of the growth is related with the bank size, differently from the LPE prediction. Larger CCBs have shown more variability compared to smaller one in their total assets' rates of growth. On the contrary, when it comes to loans, the variability among rates of growth of smaller CCBs has been much more variegate than the rates of growth registered among larger ones.

To sum up, considering a univariate model for which the rates of growth of assets, loans and membership are explained only by their size in the previous period and by their previous growth, smaller CCBs have grown faster. However, a well performing CCB, which has increased both the total assets and the members in one period, has actually reduced the speed of growth in the following one. Finally, larger CCBs have faced different rates of growth of total assets and members, while smaller CCBs have grown at much more similar rates. In the case of loans, the variability in the rates has been more evident for smaller CCBs.

[51] The FE estimation has not been performed in the sub-period analysis given the limited number of observations.

Table 7

Test for LPE: univariate estimations for total assets, loans and membership

*(*Significant level at 10 per cent; **Significant at 5 per cent; *** Significant at 1 per cent)*

	Total Assets	Loans	Membership
	2004-2009		
	(1)		
β	-0.341***	-0.159***	-0.218***
	(0.019)	*(0.011)*	*(0.017)*
ρ	-0.170***	0.005	-0.055**
	(0.025)	*(0.025)*	*(0.027)*
Hetero	0.029***	-0.003*	-0.117***
	(0.004)	*(0.001)*	*(0.005)*
	2004-2007		
	(1)		
β	-0.135***	-0.193***	-0.307***
	(0.034)	*(0.029)*	*(0.045)*
ρ	-0.211***	-0.206***	-0.461***
	(0.064)	*(0.039)*	*(0.047)*
	2008-2009		
	(1)		
β	-0.186**	-0.391***	-0.390***
	(0.094)	*(0.027)*	*(0.033)*
ρ	-0.743***	-0.183***	-0.305***
	(0.040)	*(0.074)*	*(0.130)*

(1) Robust standard errors

Multivariate growth models

The univariate analysis has underlined how size might have a negative impact on growth. However, following Goddard et al. (2004) suggestions, it seems worthily to improve the model with more variables in order to assess in a more complete and robust way the determinants of growth. The new models have been defined by including financial variables, such as balance sheet variables, the return on assets, the cost-income ratio, the tier 1 ratio, the non-performing loans; variables related with the economic environment in which the CCB is settled such as the also HH Index, the regional GDP growth, the incidence of the branches and, finally variables related with CCBs' specificities, such as the incidence of members over the reference population living in the reference area, the reference area as well as proxies for interest rates on loans and deposits. Table A 5 summarizes some descriptive statistics about the variables introduced, while Table A 6 and Table A 7 give a more detail pictures of the situation by presenting the variables' means by CCBs Federations. The three models have been estimated through FE technique for three time periods—i.e. the overall period from 2004 to 2009, the pre-crisis from 2004 to 2007 and period of the turmoil from 2008 to 2009. The pair wise correlation between variables is presented in Table A 8.

Total Assets

Table 9 presents the results for the analysis performed on the total assets' growth. Estimations run for the overall period (Table A 9 (a)) show how the negative relationship between size and growth holds even with a multivariate estimation. Moreover, its magnitude rises with the inclusion of more variables. The estimation of the ρ never returns a significant value. According to the results of Goddard et al. (2004) for Italy and CCBs, the model estimated here confirm that there is no evidences of persistence of growth for the Italian CCBs in the period from 2004 to 2009. The homoscedasticity hypothesis is rejected and the variance among CCBs growth rate is large with the decreasing in size, as assessed by the ξ coefficient.

Furthermore, the multivariate model has provided some interesting results concerning other determinants of the growth. The cost-income ratio, the tier 1 ratio and the amount of non-performing loans have the expected negative signs. Faster growth is achieved by CCBs able to control their efficiency and the amount of bad debt. The negative sign of the tier 1 ratio underlines how the over capitalization of CCBs, obliged to send as reserve the 70 per cent of their profits, may be a too prudent behaviour. The ratio of potential member is negative, underlining that the closer the CCBs are to cover all the population in their reference area, the more difficult will be to grow. The ROA has a negative and significant sign. Considering the goal of CCBs, the enlargement of the market share and the absence of a shareholding profit aim, the ROA will necessary be lower when the CCB grow in terms of assets. The empirical results derived from these estimations described how smaller CCBs, more cost-efficient, less capitalised and with a lower share of bad loans, working in area with a lower ratio of members, have grown faster. Smaller CCBs have grown faster thanks to their capacity to enlarge their reference area and to deepen the network of their branches, where the competition was lower.

The model has underlined how, the growth is positively related with the interest rate on loans, while negatively related with the interest rate on deposits. During the financial crisis (Table A 9 (b)), while the interest rate on loans has remained positive and significant, the earnings on deposits have not only drastically reduced in magnitude, but also became not significant.

Loans

The multivariate analyses for loans are reported in Table A 10. Thanks to these specifications, the size-growth relation has become clearer. The sign is negative and significant in all periods. For loans, as well as for the total assets, smaller CCBs have better performed than larger CCBs. However, the impact of the previous period growth has remained ambiguous considering the overall period (Table A 10 (a)), since the FE coefficient is non-significant. When the analysis has been

performed on two sub-periods, it is easy to underline how the size has impacted differently: β has a negative sign before the crisis but a positive one after. The hypothesis of persistence of growth is rejected in favour of the hypothesis of cyclical growth in loans from one year to the other. The third hypothesis about homoscedasticity has been verified. The variability in the growth of loans is constant and in particular, it is not related to the size of the bank.

Similar to the growth of assets, also the growth of loans is negatively related with a high cost-income ratio and a high capitalisation. The negative sign of the incidence of members' variable gives the importance of potential new members as an input for the growth, especially in the pre-crisis period. While in the pre-crisis period the most dynamic CCBs were those with a less traditional business (lower net interest on the net margin ratio), considering the overall period and the crisis period, loans have grown more for more traditional CCBs. The ROA sign is consistent with the total assets results and confirms that the strategy of CCBs is more devoted to increasing their shares respect to their shareholding profits.

The network of branches and the larger extension of the reference area have contributed to the growth of loans. The regions affected by lower economic growth have required more loans compared to richer regions. An interpretation of this may be that loans borrowed by CCBs seem not to be addressed to new investments, but to other goals, such as consumption. The competition is beneficial in terms of loans since the higher is its level, the higher is the amount of loans.

Finally, the interest rate on deposits has helped the growth of loans. This counter-intuitive fact may be explained by the strong needs of liquidity by CCBs, which have tried to attracted money in order to finance loans. It should be recall that CCBs are mainly financed through the direct funding raise. This has become especially true during the turmoil, when the interest on deposits shows a positive and significant sign (Table A 10 (c)). During the turmoil, larger CCBs have been able to better finance the economy, even though the increase in loans have been negatively related with ROA; meanwhile, the higher interests on deposits became a strategy to attract capitals.

Members

Finally, the multivariate analyses on members are reported in Table A 11. Heteroscedasticity affects all the model specification and the hypothesis of constant growth variability is rejected. The results concerning both the β and the ρ coefficients do not pass the robustness check performed with the pooled OLS estimator. In order to improve the model, a new regressor has been included—i.e., the total assets.

In the literature about members' growth, the total assets have been used as a proxy for

economies of scale measure (Gorton and Schimid, 1999; Leggett and Strand, 2002). The idea is that larger CCBs may be more attractive than smaller ones for new members. Once the log of assets is added, the LPE is rejected in favor of a negative and significant relation in all periods (Table A 11 (c)). Moreover, according to the results concerning the ρ values, the growth of member in one period will not affect the growth in the next period.

The growth of members shows also other peculiarities compared to the previous two. The relationships with the cost-income ratio, the tier 1 ratio and the ratio between the interest revenue over the total revenue are never significant. The negative sign of the potential new member variable underlines how it is easier to increase the number of members in an area not yet saturated, at least till 2007 (Table A 11 (c)). Members are more attracted by CCBs with larger total assets. This is an interesting result if compared with the β coefficient. Actually members are interested in the economic size of the bank, independently of the number of members that have already decided to join it. It seems that members are not mimicking others, but they decide which CCB to join according to its economic results.

As expected, the growth in members is speeded by the presence in the area of a network of branches. Nor the richness of the area, neither the level of competition seems to have a role in describing this growth. A larger reference area is able to increase the number of members. Finally, members have been more interested in join CCBs which paid higher interest rate on deposits and which earn less from interest rate on loans. During the financial turmoil, the results are less clear. In particular, members increase more in CCBs characterized by higher level of non-performing loans and by a reduction of interest rates on deposits (Table A 11 (c)). Those CCBs seem to be interested in sustaining the economy more than in maintain good qualitative and profitable indicators. Members seem to value this strategy.

5.6 Conclusion

This chapter has tried to find evidence for the LPE looking at the Italian CCBs in the period from 2004 to 2009. Moreover, following Tschoegel (1983), it has tested together with the size-growth hypothesis, also the hypotheses concerning the persistence of growth and the variability of growth according to size. However, since the results of the univariate models were not conclusive, the model has been extended from the univariate to the multivariate one, in order to assess the determinants of the growth of total assets, loans and members.

Following the analyses by Goddard et al. (2002), the univariate model has been improved with more covariates. The multivariate estimations have allowed deriving more robust conclusions. The LPE is always rejected in favour of a negative relationship between size and growth. Less clear

remains the persistence of growth: in particular, considering the overall period, it seems that the growth in one period is not affecting the growth in the next period. Finally, only in the case of loans, the variability among growth rates is independent of the size of the banks. In the case of total assets and members, the presence of heteroscedasticity indicates how there is a relationship between the variability of the growth and the CCBs' size.

The multivariate analyses detach other elements on which the growth is related. Once the total assets are considered, CCBs with a better control of their efficiency and of the non-performing loans have performed better. An important role is also played by the interest rate on loans that guarantees profits to the CCB. Focusing on loans, once again the cost-income ratio has helped in explaining the growth of CCBs together with the network of the branches. As expected, a higher amount of non-performing loans has reduced the quantity of loans, given the lower disposal of funds from the supply side. Given the direct fund raising, the higher interest rates on deposits have possibly increased the availability of funds to be reinvested as loans. Finally, the variables that explain the growth of member are less related with the balance sheet. The rate of growth in this case is negatively related with the total assets, signalling how members have been more attracted by better performing CCBs.

Furthermore, an important role in the multivariate regressions has been played by variables that describe features of the area in which the CCB is settled. The growth of members is faster in area with a lower concentration of members. The larger is the reference area the higher is the growth of assets, loans and members. Thus, CCBs are able to exploit their comparative advantages even with the increase in size, at least till a certain point. Finally, the richness of the area has played a negative role on the growth of loans, but has positively impacted on the growth of members. CCBs are an important resource in less rich areas even though the lower demand for loans decreases CCBs possible profits.

A question then arises: which are the "*environmental*" conditions, thanks to which CCBs will better perform compared to other types of banks? The next chapter aims to answer this question by studying the role of social capital in the CCBs business.

5.7 Appendix

Table A 5

Description of the explicative variables and main descriptive statistics

Variable Name	Variable Definition and Source	n. obs.per year	Mean	Median	Std.dev.
Control variables (at bank level)					
Balansheet and efficiency variables					
ROA	Return on asset	411	1.2	1.2	0.4
Cost-income	Ratio of operating expenses on overall operating profit	411	2.5	2.0	3.1
Tier 1 ratio	Ratio of operating expenses on overall operating profit	411	18.8	16.5	9.0
Non-performing loans	Yearly amount of loans considered as non performorming	411	1.23	0.8	3.4
Mergers	Dummy variables describing whether a CCB has gone through a M&A process in the period of analysis	411	0.1	0	0.3
HHI	Herfindhal Index computed as the sum of the squares of the market shares of banks which operates in the reference area of each CCB	411	11.2	10.7	5.8
Interest rate on loans	Average earnings on loans	411	3.6	3.5	1.0
Interest rate on deposits	Average costs paid for deposits	411	4.5	4.5	1.0
Variables describing with the CCB's specifities					
Net interest/net margin	Ratio of net interest revenue and gross income	411	75.2	75.2	6.8
Growth of the member incidence	Share of CCB's member over the population resident in the CCB's reference area	411	-4.8	-4.8	1.1
Bank age	Number of years a CCB exists	411	38	69	2,5
Reference Area	Area in Km sq served by each CCB	411	1000	1033	2.2
Branch incidence	Ratio between the number of branches and the population in the reference area	411	0.9	0.7	0.8
Control variables (at regional level)					
Regional GDP growth	Yearly regional GDP growth. Istat	20	1.0	1.0	1.3

Table A 6

Credit cooperative banks by CCB Federations (2004-2009)

(Units and percentage)

	Number of CCBs (1)	Growth of total assets (2)	Growth of loans (2)	Growth of members (2)
C.C.B. Piemonte- Valle d'Aosta- Liguria	10	6.1	1.1	6.9
C.C.B. Lombardia	45	5.6	9.9	6.7
C.C.B. Trentino	45	5.5	8.9	4.0
C.C.B. Alto Adige	48	3.7	3.7	2.0
C.C.B. Veneto	40	7.5	10.7	7.6
C.C.B. Friuli	15	5.7	8.1	6.6
C.C.B. Emilia	23	6.4	10.7	8.1
C.C.B. Toscana	32	7.5	11.7	8.6
C.C.B. Marche	20	8.1	11.3	5.2
C.C.B. Lazio- Sardenia- Umbria	31	7.1	12.8	3.8
C.C.B. Abruzzo- Molise	10	6.2	8.8	3.1
C.C.B. Campania	21	6.6	10.9	3.9
C.C.B. Puglia- Basilicata	27	6.9	10.5	2.2
C.C.B. Calabria	16	6.8	8.6	3.5
C.C.B. Sicilia	28	5.4	8.6	1.1

Source: Bank of Italy

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(1) Number of CCBs whose headquarter is in the region, values at 31.12.2011.
(2) Overall average.

Table A 7

Some control variables by CCB Federations (2004-2009)

(Units and percentage)

	Net interest/ Net margin	Nonperforming loans	Tier 1 ratio	Cost-income	ROA	Growth of member incidence	Incidence of branches	Reference area	HHI
C.C.B. Piemonte-Valle d´Aosta- Liguria	71.8	1.3	12.9	2.8	0.9	-5.0	80.9	2095.5	9.6
C.C.B. Lombardia	74.9	1.1	17.8	2.1	1.2	-5.1	220.1	625.9	10.9
C.C.B. Trentino	75.2	0.7	16.2	2.7	1.0	-3.4	120.1	607.2	12.5
C.C.B. Alto Adige	77.2	1.2	20.3	2.4	1.1	-3.9	63.3	633.9	17.2
C.C.B. Veneto	72.5	0.9	14.3	2.4	1.2	-5.2	114.0	1201.0	10.1
C.C.B. Friuli	69.8	0.7	19.4	2.5	1.2	-4.4	161.0	830.6	10.1
C.C.B. Emilia	72.4	1.0	15.2	3.4	1.1	-5.2	82.0	1814.5	7.4
C.C.B. Toscana	73.9	1.4	15.0	2.3	1.2	-5.2	56.1	1498.3	12.6
C.C.B. Marche	75.9	1.1	13.1	1.8	1.2	-4.9	94.2	1064.1	12.9
C.C.B. Lazio- Sardenia-Umbria	75.3	1.5	20.1	2.6	1.3	-5.7	40.0	1424.2	11.7
C.C.B. Abruzzo- Molise	78.3	1.9	17.2	2.7	1.1	-4.4	64.5	928.4	12.5
C.C.B. Campania	77.1	1.6	21.4	2.4	1.3	-4.7	76.4	755.0	13.4
C.C.B. Puglia-Basilicata	77.3	1.5	26.3	3.0	1.3	-5.6	26.5	1614.6	9.4
C.C.B. Calabria	76.0	2.7	23.4	2.9	1.3	-4.8	59.1	875.8	15.2
C.C.B. Sicilia	79.1	1.9	31.8	2.0	1.3	-5.6	30.5	1677.9	14.7

Source: Bank of Italy

Table A 8

Pair wise correlation among variables

	Growth assets	Growth loans	Growth member	Growth of the member incidence	ROA	Cost-income	Tier 1 ratio	Non performing loans	Net interest/net margin	HHI	Regional GDP growth	Branch incidence	Reference Area	Interest rate on loans
Growth assets	1													
Growth loans	0.427*	1												
Growth member	0.139*	0.201*	1											
Growth of the member incidence	-0.082*	-0.173*	-0.140*	1										
ROA	0.008	0.163*	0.0320	-0.152*	1									
Cost-income	-0.046*	-0.121*	-0.062*	0.038	-0.407*	1								
Tier 1 ratio	-0.072*	-0.114*	-0.178*	-0.037*	0.195*	-0.029	1							
Non-performing loans	-0.083*	-0.084*	-0.061*	-0.052*	-0.062*	0.056*	-0.006	1						
Net interest/net margin	-0.210*	0.013	-0.068*	-0.009	0.212*	-0.179*	0.172*	-0.010	1					
HHI	-0.073*	-0.128*	-0.133*	0.462*	-0.046*	-0.001	0.231*	0.000	0.094*	1				
Regional GDP growth	-0.017	-0.015	-0.006	-0.010	0.330*	-0.193*	0.028	0.009	0.329*	-0.021	1			
Branch incidence	0.001	0.002	0.122*	0.078*	0.001	-0.056*	-0.155*	-0.074*	-0.121*	-0.124*	0.032	1		
Reference Area	0.044*	0.088*	0.085*	-0.373*	0.030	0.022	-0.111*	0.078*	-0.059*	-0.381*	-0.002	-0.422*	1	
Interest rate on loans	0.076*	0.181*	-0.018	-0.402*	0.179*	-0.063*	0.172*	0.085*	0.121*	-0.083*	0.006	-0.077*	0.136*	1
Interest rate on deposits	-0.021	0.199*	0.175*	-0.053*	0.383*	-0.143*	-0.403*	-0.026	0.256*	-0.079*	0.026	0.097*	0.058*	0.178*

* Significance level 5%

Table A 9

Multivariate estimation: Total Assets

*(*Significant level at 10 per cent; **Significant at 5 per cent; *** Significant at 1 per cent)*

	2004-2009 (a)	2004-2007 (b)	2008-2009 (c)
	(1)	(1)	(1)
β	-0.371*** (0.030)	-0.289*** (0.050)	-0.504*** (0.094)
ρ	-0.044 (0.058)	-0.152*** (0.055)	-0.434*** (0.060)
Member incidence	-0.013 (0.010)	-0.003 (0.015)	-0.005 (0.020)
ROA	-4.255*** (0.839)	-2.028* (1.121)	-4.264*** (1.091)
Cost-income	-0.002** (0.001)	0.0005 (0.002)	-0.002*** (0.001)
Tier 1 ratio	-0.002* (0.001)	-0.006** (0.003)	-0.001 (0.002)
Non-performing loans	-0.002 (0.001)	0.001 (0.002)	-0.001 (0.001)
Net interest/net margin	-0.003*** (0.0004)	-0.0002 (0.001)	-0.003*** (0.001)
HHI	-0.030 (0.107)	0.048 (0.023)	0.078 (0.144)
Regional GDP growth	0.047 (0.098)	-0.00001 (0.004)	-0.202 (0.220)
Reference Area	0.066*** (0.022)	0.056** (0.028)	0.121** (0.050)
Branch incidence	0.033* (0.018)	0.024 (0.019)	0.050 (0.035)
Interest rate on loans	0.794*** (0.230)	0.029 (0.245)	0.570* (0.324)
Interest rate on deposits	-0.362 (0.398)	2.693*** (0.617)	0.193 (0.500)
Heteroskedasticity	yes	yes	yes
ξ (2)	-0.0005* (0.0003)		
R-squared	0.37	0.22	0.73

(1): Robust Standard Error

(2): From the auxiliary $\hat{u}_{it}^2 = const + \xi \hat{\beta}_{it}^2$

Table A 10

Multivariate Estimation: Loans

*(*Significant level at 10 per cent; **Significant at 5 per cent; *** Significant at 1 per cent)*

	2004-2009 (a)	2004-2007 (b)	2008-2009 (c)
			(1)
β	-0.248*** (0.015)	-0.465*** (0.034)	-0.485*** (0.054)
ρ	-0.006 (0.023)	-0.194*** (0.032)	-0.123* (0.071)
Member incidence	-0.001 (0.010)	-0.025* (0.015)	0.013 (0.027)
ROA	-2.110*** (0.614)	1.936* (1.147)	-1.512* (0.819)
Cost-income	-0.002*** (0.0006)	-0.001 (0.001)	-0.002** (0.001)
Tier 1 ratio	-0.006*** (0.001)	-0.020*** (0.002)	-0.008*** (0.003)
Non-performing loans	0.0001 (0.001)	0.003 (0.002)	-0.001 (0.001)
Net interest/net margin	-0.001*** (0.0003)	0.002** (0.001)	-0.002*** (0.0004)
HHI	0.202** (0.093)	0.397** (0.206)	0.204 (0.169)
Regional GDP growth	-0.575*** (0.087)	0.008 (0.005)	-0.258 (0.197)
Reference Area	0.118*** (0.020)	0.070** (0.031)	0.001 (0.050)
Branch incidence	0.053*** (0.017)	0.036 (0.024)	0.004 (0.022)
Interest rate on loans	-0.279 (0.212)	-0.348 (0.302)	0.111 (0.366)
Interest rate on deposits	3.070*** (0.335)	4.070*** (0.657)	0.824* (0.452)
Heteroskedasticity	no	no	yes
ξ (2)			
R-squared	0.28	0.48	0.5

(1): Robust Standard Error
(2): From the auxiliary $\hat{u}_{it}^2 = cnst + \xi \hat{\beta}_{it}^2$

Table A 11

Multivariate Estimation: Membership

*(*Significant level at 10 per cent; **Significant at 5 per cent; *** Significant at 1 per cent)*

	2004-2009 (a)		2004-2007 (b)		2008-2009 (c)	
	(1)	(1)	(1)	(1)		
β	-0.269***	-0.329***	-0.495***	-0.572***	-0.554***	-0.553***
	(0.071)	(0.091)	(0.080)	(0.089)	(0.094)	(0.094)
ρ	-0.051**	-0.020	-0.322***	-0.276***	-0.266***	-0.267***
	(0.025)	(0.024)	(0.067)	(0.066)	(0.077)	(0.077)
Member incidence	-0.024	-0.015	-0.026**	-0.019*	0.029	0.028
	(0.023)	(0.019)	(0.012)	(0.011)	(0.019)	(0.019)
Total Assets		0.1113**		0.144**		-0.029
		(0.053)		(0.057)		(0.037)
ROA	-2.193***	-1.711***	-1.243	-1.335	0.021	0.002
	(0.788)	(0.645)	(1.198)	(1.179)	(0.693)	(0.692)
Cost-income	-0.001	-0.001	-0.0001	-0.0001	0.0003	0.0002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.0004)	(0.0004)
Tier 1 ratio	0.0001	-0.0001	-0.003	-0.002	0.001	0.001
	(0.001)	(0.001)	(0.003)	(0.002)	(0.001)	(0.001)
Non-performing loans	0.002	0.001	0.004**	0.004**	0.005**	0.005**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Net interest/net margin	-0.0005	-0.0005	-0.0001	-0.0003	0.0002	0.0001
	(0.0003)	(0.0004)	(0.001)	(0.001)	(0.0003)	(0.0003)
HHI	0.166	0.130	0.304	0.307	0.108	0.107
	(0.114)	(0.109)	(0.193)	(0.192)	(0.144)	(0.143)
Regional GDP growth	0.006	0.005	0.007	0.006	0.205	0.205
	(0.008)	(0.008)	(0.011)	(0.011)	(0.197)	(0.197)
Reference Area	0.103***	0.083***	0.119***	0.106***	0.032	0.034
	(0.030)	(0.023)	(0.033)	(0.033)	(0.038)	(0.038)
Branch incidence	0.056**	0.040**	0.018	0.013	-0.004	-0.003
	(0.024)	(0.019)	(0.040)	(0.039)	(0.019)	(0.019)
Interest rate on loans	-0.449*	-0.469*	-1.149***	-1.001**	0.002	0.019
	(0.266)	(0.271)	(0.337)	(0.342)	(0.219)	(0.221)
Interest rate on deposits	1.093***	0.776**	3.869***	3.189***	-1.459***	-1.438***
	(0.357)	(0.316)	(0.715)	(0.721)	(0.432)	(0.429)
Heteroskedasticity	yes	yes	yes	yes	yes	yes
ξ (2)	-1.306***	-1.306***				
	(0.055)	(0.055)				
R-squared	0.20	0.21	0.56	0.56	0.57	0.57

(1) Robust Standard Errors

(2) From the auxiliary regression $\hat{u}_{it}^2 = const + \xi \hat{\beta}_{it}^2$

6 Credit Cooperative Banks in Wonderland: the role of Social Capital on the performance of Credit Cooperative Banks [52]

6.1 Introduction

The central role of trust and social capital in the efficient functioning of financial markets and institutions is now widely recognized (e.g. Calderon et al., 2002; Guiso et al., 2004; Guiso, 2010). The financial crisis that has been on going since 2007-08 at the latest taught what calamitous consequences the lack of trust among the market participants can cause. However, there are still many questions related to social capital and financial institutions that have not been adequately dealt within the literature. Are certain types of organizations more trust-intensive than others? What is the organizational set-up of financial institutions in areas characterized by high or low levels of trust?

This chapter aims to provide some preliminary answers to these questions by analysing the relationship between territorial social capital and the market shares of CCBs in Italy. Cooperative banks are of particular interest in this context because, according to Fischer (1998): 1) they promote financial inclusion among groups that would otherwise be discriminated against in the financial markets; 2) they are able to include these groups by utilizing the relational ties between their members; 3) they require relatively high levels of social capital in order to sustain themselves and grow. The chapter contributes to the relatively small but growing literature on the relationship between cooperatives and social capital. In particular, it tackles the question whether cooperatives rely more on particularistic or universalistic type of social capital. This is an interesting question because the prior literature does not suggest a clear answer.

The Italian CCBs are an interesting case because they have remained in many ways more loyal to their original roots than cooperative banks in other European countries. Italian CCBs have historically developed in rural or suburban areas characterized by the centrality of internal linkages, of the local culture; and based on the sharing of rules and values (Visco, 2012). This is evidenced by the fact that many Italian CCBs remain relatively small in size and, even though the current legislation has softened the differences with commercial banks, they have, among other things, to serve strictly defined geographical areas and satisfy a requirement concerning loans to members[53].

[52] Joint chapter written together with Panu Kalmi (Vaasa University, Finland) and Maria Lucia Stefani (Bank of Italy, Trento branch, Italy). The opinions expressed in this paper are those of the authors and do not involve the responsibility of the Bank of Italy.

[53] More precisely, according to the 1993 Banking Law and the Bank of Italy's regulation, the reference area of a credit cooperative bank is composed by the municipalities in which it has branches and the neighboring ones; at least 95 per cent of the bank's risky assets must refer to this area; the majority of the bank's activity must be devoted to loans to members or non-risky assets (Treasury bonds).

Also, due to legislation, they have to allocate at least 70 per cent of annual profit to indivisible reserves. These structural features direct CCBs into producing local public goods (Goglio and Leonardi, 2010) rather than private benefits, which is one reason why it is expected for territorial social capital to be an important determinant of their success.

Another interesting feature of CCBs is that they have experienced substantial growth after the liberalisation of the financial market started in the 1990s, and the growth even accelerated after the financial crisis started in 2008. Despite this, their overall market share was relatively small (8 per cent) still in 2011; however, it had grown from the 5 per cent registered in 2000.[54] Furthermore, in certain niches CCBs are very important: their market shares in the finance of small and medium-sized enterprises and producer households had reached almost 20 per cent (it was 15 per cent in 2005).

Italy is also an interesting case to study because there is considerable heterogeneity both in the diffusion of social capital and CCBs. Indeed many of the earliest contributions on social capital used empirical data from Italy (e.g. Putnam, 1995; Guiso et al., 2004).

However, a statistical relationship between CCBs and social capital may be confounded by the fact that besides from having a different organizational mission than profit-maximizing banks, they also have different territorial orientation than banks that operate nationally or multinationally. For instance, a positive relationship between CCBs and social capital might indicate that people in high social capital – areas prefer local banks, rather than an orientation towards local public goods. Fortunately, in Italy there are also local banks that have a different structure, and this fact enables to isolate the effects of being a cooperative vs. being local.

The rest of the chapter is organised as follows: section 2 reviews related literature; section 3 discusses the different forms of banking organization in Italy, and the hypotheses how social capital is related to the organizational form; section 4 introduces the dataset used in regressions; section 5 describes some features of CCBs and of social capital at regional level that are relevant to this analysis; section 6 presents the empirical strategy; section 7 summarises the results and section 8 presents the conclusions.

6.2 The related literature

Credit cooperative banks are known for their local relationship lending, where they collect soft information about borrowers that helps to reduce the agency costs related to moral hazard and adverse selection (e.g. Angelini et al., 1998; Guinnane, 2001). A product of the latter half of the nineteen century, initially they were of very small size, relied on unlimited joint liability of

[54] In several European countries, cooperative banks have market shares in excess of one-third of the retail market (e.g. in Austria, Finland, France and the Netherlands).

members, and utilized social relationships rather than financial incentives. However, during the twentieth and early twenty-first century they have significantly increased in size, personal unlimited liability has been abolished, and financial incentives have become more common (e.g. Jones et al., 2009). Another striking feature within European cooperative banks has been a tighter integration around the central units, the very successful Dutch Rabobank being a model for many European cooperative banks.

The use of relational ties among the members of the early (nineteen century) cooperatives suggests that social capital – trust and shared values – were important ingredients of its success. One should be more specific about what type of social capital is under discussion. According to the perspective of this chapter, the distinction between universalistic and particularistic types of social capital (de Blasio et al. 2012) can be particularly useful here. Particularistic social capital refers to the relationships and trust within a well-defined network, whereas universalistic social capital refers to the more generalized values and beliefs that are shared within broader communities. Thus, the early cooperatives that stressed the small size and tight "common bond" among the members appear to have relied more on particularistic version of social capital. However, as Fischer (1998) has pointed out, the growth of cooperatives and the strengthening of their network may well require more universalistic type of social capital. Thus, the different stages of cooperative development may require different types of social capital, the focus shifting from particularistic to universalistic.

There are some additional complications in addressing the question on how social capital and organizational form are related. La Porta et al. (1997) argued that a high level of generalized trust is necessary for the creation and successful operations of large complex firms. In the absence of trust, production may remain small-scale and local. Thus, according from this perspective, the typical features of cooperative enterprises would appear to correlate with lower levels of social capital.

Guinnane (2005) has also argued against the importance of social capital in early credit cooperatives, citing elaborate rules, restrictions and sanctions that governed member behaviour as counterevidence. However, this type of regulation may not be due to cooperative organization but it is an inherent feature of organizations dealing with financial contracts; cooperatives hardly differed from profit-maximizing enterprises in this. What may matter more is how willing the organizations are to apply the sanctions. There appears to be no hard evidence on this issue.

Due to these somewhat conflicting claims, one needs to look at empirical patterns for further evidence. There is some previous literature that has addressed the issue of social capital (or trust) and the incidence of cooperatives. Fischer (1998) and Paldam and Svendsen (2000) presented some

casual evidence that cooperative development requires relatively high level of social capital.[55] Jones and Kalmi (2009) addressed this issue in a more systematic way by regressing cross-country indicators of cooperative development by World Values Survey measure of generalized trust. They detected a very robust association between the two types of variables, and they presented instrumental variable results suggesting that the relationship flows from trust to cooperatives (rather than vice versa). Moreover, they found that even though there was some evidence that high levels of trust were associated with the presence of large listed organization, the link was much weaker than for cooperatives.

However, their paper was related to cooperatives generally, and to date there appears not to be any studies on the relationship between financial cooperatives (or cooperatives in any other specific sectors) and social capital. However, there is a related study by Ostergaard et al. (2008), who find the Norwegian savings banks have better survival propensities in areas with higher social capital. This indicates that also other local banks than cooperatives can benefit from higher social capital.[56]

6.3 The research hypotheses

Even though Italian cooperative banking has changed fundamentally from the early days, the original differences are still related in their structures. For instance, CCBs have to allocate 70 % of their profits to legal reserves, they are constrained on what they can pay as dividends, their shares are not tradable, and at least 50 % of risky assets must be allocated to members. In Banche Popolari, the voting mechanism adheres to "one-head one-vote" – principle, but otherwise they are relatively unconstrained in their operations.[57]

For this reason, the set of Italian banks has been divided into three groups: 1) large banks and banking groups, operating nationally or multinationally; 2) local banks, including small joint stock banks, former savings banks, and Banche Popolari; and 3) CCBs.

Given the peculiar business strategy of the Italian CCBs, based on personal relations between borrowers and lenders, it seems reasonable to hypothesize that CCBs benefit from the presence of a higher value of social capital in their operating area.

[55] Both authors were concerned about the meagre results associated with cooperatives in the development contexts: in areas where the role of cooperatives could be important (as in developing countries), the level of social capital might be so low that spontaneous development of cooperatives does not take place, whereas state-led creation of cooperatives is typically too heavy-handed to create beneficial results.

[56] One should note that there are no cooperative banks in Norway, so they represent the only form of community banking there. Norway is in general also a country characterized with high levels of social capital, which may also influence results.

[57] In particular, they are not constrained in paying dividends (even though maximum ownership of a single owner cannot exceed 0.5%), their shares are tradable, there is no limit on the loans granted to non-members, and they have to allocate only 10% of profits to reserves.

The hypothesis to be tested is therefore whether the market share of CCBs is higher where the endowment of social capital is higher. The formation and then the development of CCBs may require relatively high levels of social capital and this is one reason why it is expected to find higher CCBs' market shares in areas with high levels of social capital. CCBs may also be more resilient in areas with high levels of social capital, where people are more willing to defend local public goods.

However, as discussed, CCBs share the feature of local operations with other local banks. Therefore, any observed relationship with social capital also may be due to them being local banks, instead of being cooperatives. As noted above, the relationship between locality and social capital may not be straightforward. On the one hand, in areas with high levels of social capital, residents may be more committed to local development and improving the well being of the region. On the other hand, some aspects of social capital, especially higher generalized trust, may lead to higher propensity to trust the providers that can provide superior service or lower-cost service, even if they were not local providers. There is some previous evidence that can be interpreted either way.

More particularly, since CCBs operate mostly with "small", opaque customers, in this chapter two different dependent variables have been used: the (total) market share of CCBs at province level and the market share computed on loans granted to small firms (with less than 20 employees).

6.4 The data

The data used in this analysis are collected from two different sources. Data concerning banks are from Bank of Italy's Supervisory Reports and cover the period from 2003 to 2011. In particular, information on CCBs refers to all Italian banks belonging to this category (more than 400), apart from those for which data are not available for all the covered period, because they ceased their activity for reasons different from mergers or acquisitions (namely, liquidation).

Data on social capital are derived from the Italian National Institute of Statistics (Istat). In particular, two different definitions of social capital are used here. The first is social capital intended as *network*, that is measured with data on people who have joined an association, from the "Multi Purpose Survey on Italian Households: aspects of daily life". The variable used in the baseline regression (*associations*) represents the share of people in 2010 that have declared to join an association within the past 12 months, regardless of its type[58]. This form of measuring social capital has been made famous by Putnam (1995), who introduced membership of formal associations and groups as an indicator. Following De Blasio et al. (2012), the variable has then been splitted into two: on the one hand, people joining associations characterised by

[58] Given the type of data available it is possible to distinguish different kind of associations according to their activity but not to distinguish between for profit and non-for-profit associations.

"particularism", that is whose goal is to promote the interests of particular categories of the population (e.g. cultural, artistic, sport associations); on the other, people joining associations that are characterised by "universalism", that is associations where members do not derive a direct benefit from their membership (e.g. ecology, assistance and solidarity, political and trade unions associations, non-government organisations).[59] The difference with the two components has then been constructed and used in the regression (*asspart*) so as to measure the impact of the incremental degree of particularism, after correcting it for the level of universalism[60].

The third variable related to social capital used is *trust*, measured through the question: "With which probability do you think a person you don't know will return your wallet?". The responses to this question have been measured at a scale 1-4, where 1 means "not probable", 2 "small probability", 3 "intermediate probability", and 4 "very probable". The values are means to this question at the province level.

This proxy for the level of trust in the area has been preferred to other proxies available, which refer to trusting neighbours or the state, since it better describes the general trust among citizens. A similar variable has been used previously e.g. by Schmid (2002). According to Banfield (1958) and Fukuyama (1997) in area with a lower level of trust, people rely more on transaction with a narrow group of either relatives or known people. For this reason, in order to describe the impact of trust, the proxy considered is the one built on trusting unknowns.

The analysis is done at the province level[61]. For the sake of data homogeneity in the time period of this analysis, data related to provinces which were created after 2005 have been re-attributed to the previous one: therefore the dataset includes 103 provinces (instead of 110).

The definitions, sources and the main statistics on the variables used in this analysis are presented in Table A 12.

6.5 The CCBs and the social capital at regional level

Out of the more than 400 banks, around 40 per cent has its headquarter in the North-Eastern regions, with a concentration in Trentino and Alto Adige where are established around 25 per cent of the Italian CCBs. At a regional level, the market share of CCBs on loans (including non-performing ones) to residents was between the 2.4 per cent in Sardinia and 53.5 per cent in the

[59] A similar distinction, although using different terminology, was made also by Knack and Keefer (1997).

[60] The choice of using the spread between the two types of variables is a way to partially correct the possible endogeneity issue. The most preferable tool would have been an instrumental variable, which on the one hand better defines the direction of the causality, and on the other solves the endogeneity problem. However, at the current stage, adequate data to instrument the variable "universalistic associations" are not available at the province level.

[61] As for Istat data, more details on the stratification and representativeness of the sample are available by ISTAT website.

province of Trento. The market share is higher restricting the analysis to the more traditional customers, namely small and medium enterprises (SMEs): in this case, at regional level, the share ranges from the 3.6 per cent of Sardinia to the 68.3 per cent of the province of Trento (Table A 13).

The endowment of social capital is also differently distributed across regions (Micucci and Nuzzo, 2005). The share of people joining a generic association, a measure for the intensity of the network of local relations, is higher in Trentino and Alto Adige (where more than a half of the population is involved in some associations) and, more generally, in the North-Eastern part of Italy, while it is lower in the South. Disentangling by scope, in every region the incidence of universalistic associations prevails. In regions like Trentino and Alto Adige, the difference between participation in the two types of associations is around 25 percentage points. On the contrary, in regions where the percentage of people being involved into an universalistic association is lower than 20 per cent, the value for the participation in particularistic associations is only two or three points lower (Table A 14). As for social capital defined as trust, the same pattern appears, the North-Eastern regions having the highest values of trust and the Southern regions the lowest. This is of course consistent with previous research on the subject (e.g. Putnam, 1995; Guiso et al., 2004).

Turning finally to variables concerning the economic local activity, the per capita value added value highlights the North-South gap (Table A 15). The share of value added derived from agriculture tends to be higher than the national average in the Southern regions and in Alto Adige and Trentino. The opposite occurs for the share of value added stemming from manufacturing activity. There are also quite pronounced differences in population density. In unemployment figures, there are also significant differences between Northern regions (where unemployment is low) and Southern region (where it is higher).

6.6 The empirical strategy

Given the nature of social capital data, which show only very little variations over years, the most reliable method to use is the Pooled OLS estimator. The main hypothesis is tested at provincial level and the following model is estimated:

$$marketshare_{it} = \beta_0 + \beta_z socialcapital_i + \beta_n control_{it} + \alpha_j + z_t + u_{it} \qquad (1)$$

where the dependent variable is a measure of the market share of CCBs in province *i* from 2004 to 2011.[62] More specifically, the baseline regression considers as dependent variable the market share of CCBs' total loans in each province. Moreover, in other to account for the specificity of CCBs' borrowers, the market share of loans addressed to SMEs that is to firms with less than 20 employees will be analysed separately. The social capital variable is represented, respectively, by a measure of

[62] Cluster- and heteroscedasticity robust standard errors have been used.

participation in associations, the difference between participation in particularistic vs. universalistic associations, and a measure of trust (see previous section). Control variables include mainly demand side variables.[63] Finally, a regression that includes both trust and network-based social capital variables simultaneously has been run. This kind of modelling strategy was used also in Knack and Keefer (1997).

However, as stated before (see section 2), the observed (if any) relationship between CCBs and social capital may be due to then being local, rather than cooperative. To tackle with this question, equation (1) has been run with the market share of local banks different from CCBs as a dependent variable.

In Table A 16 the pairwise correlations among the variables is presented. Apart from the fact that the two types of markets shares are heavily correlated (as one would expect), a significant positive correlation between BCC market shares and participation of associations has been found so as a significant negative correlation between BCC market shares and the difference between particularistic and universalistic association participation rates (indicating that BCC are especially prevalent in regions where universalistic associations are comparatively stronger), with trust variable, and with value added per capita. The market shares of local banks (other than cooperatives) are in generally less correlated with explanatory variables. The strongest association is with unemployment (positive), trust (negative) and population density (negative).

6.7 Results

In order to test the impact of social capital on CCBs' market share, for each dependent variable two regressions have been estimated. In the first one, Model I and Model III, the network variable considered is the overall share of people joining an association; in the second one, Model II and Model IV, the variable describing the network is the difference between participation in particularistic vs. universalistic association. The regressions have been run for both overall market shares of BCCs and the share of BCCs in small business lending, and similarly for local banks other than cooperatives. There are thus 8 different specifications reported in Table A 17.

The results reported in Model I (a), indicate that social capital variables have positive and significant effects on the share of CCBs' loans. According to these results, an increase of 1 percentage point in the share of people that have joined an association within past 12 months is associated with an increase of 0.250 percentage point of CCB's market share. The estimated

[63] For regressions including CCBs market shares, the average age of the CCBs in the given region and the percentage of cooperatives that have been involved in mergers have been included. Both of these variables have a positive and statistically significant association with CCBs market shares. However, because these variables do not have natural interpretations in regressions involving other banks than CCBs, and because they are to some degree endogenous, in the final version they have been kept out of the regressions. Their omission does not substantially affect the size or significance of other estimated coefficients.

coefficient is even higher (0.349), when the dependent variable is the share of CCB loans to small businesses (Model Ib). In Model II a) and b), the impact of the difference between particularistic and universalistic association memberships is estimated. A one-percentage point increase in this variable increases CCB market share around 0.629 percentage points in model IIa and 0.811 percentage points in model IIb. Other variables that are significant in explaining the CCB market share are share of agriculture in value added (positive association) and regional dummies of North East (positive) and Centre (positive). This result is not surprising, since CCBs have a long tradition in the North-East regions, where they first established. In the South and Islands, a part from Sicily, which is an exception, the CCBs are fewer and they are less deeply integrated in the local economy. On the other hand, there is also a deep division in social capital between the North and South of Italy. The inclusion of geographical dummies in fact somewhat dampens the coefficients of social capital variables—i.e. they would be higher in the absence of geographical controls.

These regressions have been repeated for local non-cooperative banks. As is evident from Models III and IV, these variables are never significant in the regressions. The only statistically significant variable in the regressions is unemployment: a one percentage point increase in unemployment is associated with around 1.1 percentage point increase in overall market shares of local banks other than BCC, and around 1.4 percentage point increase in their market share of lending to small businesses. Thus it appears that these kinds of banks are more important in economically distressed provinces.

The trust variable has been also introduced as a proxy for social capital. This is possible because the correlation between the two types of social capital is not that high (0.21 between Associations and Trust). There is a robust positive association with trust and presence of cooperative banks, consistent with the results of Jones and Kalmi (2009). Quite interestingly, the relationship between trust and the presence of local banks other than BCC is negative; these banks are more prominent in low trust provinces.

6.8 Conclusion

Cooperatives and social capital are often thought to be related and there is anecdotal evidence suggesting that relatively high levels of social capital may be required to the entry, growth and survival of cooperatives. Nevertheless, there is still relatively little empirical evidence on this issue. Moreover, theoretical predictions are ambiguous: higher levels of social capital are argued to be related to also to the prevalence of large, hierarchical organizations. This study provides one of the first kinds of empirical evidence on the relationship between social capital and the prevalence of cooperatives.

The results described indicate that social capital and market shares of CCBs are strongly

related. This is consistent with the idea that cooperative organizations need reciprocal knowledge and trust in order to grow and prosper. Furthermore, from the estimations run it seems that the links are stronger when lending to SMEs. This result is convincing, since SMEs are typically opaque borrowers, that have difficulties to obtain funding from large banks or bond markets. In areas where social capital is high, CCBs can fill this funding void through the networks and knowledge of borrowers. In contrast, in low social capital areas, the required mutual knowledge or trust may not be present and CCBs funding is less effective. The lending technology of CCBs is actually able to reduce the asymmetry of information and to allow this banks to reach opaque borrowers.

When the types of network are separated according the universalistic or particularistic, the results show that it is especially the universalistic networks that seem to matter for the market share of CCBs. This is consistent with the prediction that cooperatives are related to bridging social capital, rather than bonding social capital. Further support for this notion flows from the empirical observation that the presence of CCBs are also strongly related to trust, measured as the proportion of people who believe their wallets would be returned by strangers.

Finally, this analysis checks whether it is the local territorial orientation, rather than the cooperative structure, that causes the positive association with social capital and CCBs. Local banks other than BCCs are not related to two network measures of social capital – the number of people joining association and the difference between particularistic and universalistic associations – and there is actually a negative association between trust and prevalence of local banks than BCCs. This indicates that it is more likely that the association between social capital and cooperative banks is due to the cooperative structure, rather than their local territorial orientation. The ownership structure plays an important role and it makes a clear distinction between CCBs and local banks that only base their relationship lending on localism and reciprocal knowledge. Trust and networking among people creates a favourable environment for the growth of those banks which members are active partners of the venture.

6.9 Appendix

Table A 12

Description of the explicative variables and main descriptive statistics

Variable Name	Variable Definition and Source	n. obs.	Mean	Median	Std.dev.
Social capital variables (at province level)					
Associations	Share of people declaring to have joined associations in the last 12 months. Data from the Istat "Multi Purpose Survey on Italian Households: aspects of daily life" (2010).	927	32.2	30.9	9.8
Asspart	Spread between the share of people declaring to have joined associations with a particularistic aim and the share of people declaring to join associations with universalistic aim in the last 12 months. Data from the Istat "Multi Purpose Survey on Italian Households: aspects of daily life" (2010).	927	-.055	0.51	0.07
Trust	Level of probability attributed to the event: "an unknown person will return my lost wallet", according to the scale: 1=no probable; 2=less probable; 3=intermediate; 4=very probable. Data from the Istat "Multi Purpose Survey on Italian Households: aspects of daily life" (2010).	927	1.6	1.6	0.23
Control variables (at province level)					
Density	Population density per Km square. Istat.	927	254.5	17.9	353.8
Shr_agr	Value added from agriculture over total value added. Computations on Istat data.	927	3.2	2.7	2.2
Shr_man	Value added from manufacturing sector over total value added. Computations on Istat data.	927	27.1	26.7	7.9
Unemployment	Number of unemployed people per 10.000 inhabitants. Computations on Istat data.	927	7.5	5.8	3.9
Value_added	Per capita value added. Computations on Istat data.	927	21,616	22,762	5,527

Table A 13

Credit cooperative banks by region (2003-2011)

(Units and average percentages)

	Number of CCBs (1)	CCBs market share on total loans	CCBs market share on loans to SMEs	Other local banks' market share on total loans	Other local banks' market share on loans to SMEs
Piedmont	9	4.2	6.1	17.1	21.8
Valle d´Aosta	1	12.6	25.9	5.9	6.3
Lombardy	45	8.3	14.2	8.3	9.7
Liguria	0	3.4	4.7	4.3	4.2
Trentino	45	53.5	68.3	6.6	4.1
Alto Adige	48	36.9	54.4	36.9	33.7
Veneto	40	14.1	25.1	7.4	7.9
Friuli Venezia Giulia	15	15.7	27.5	9.1	10.7
Emilia-Romagna	23	8.7	15.6	18.7	22.3
Toscana	32	9.3	15.0	9.5	10.2
Marche	20	12.5	19.3	11.5	11.0
Lazio	25	8.2	13.5	10.0	14.5
Umbria	4	4.2	7.2	13.0	16.0
Abruzzo	8	7.8	12.3	18.6	21.8
Molise	2	3.6	6.0	7.9	8.0
Campania	21	5.4	10.4	8.1	8.2
Puglia	23	4.9	8.2	18.2	20.2
Basilicata	4	5.8	10.8	18.8	22.6
Calabria	16	8.4	12.5	1.1	1.0
Sicily	28	7.4	11.8	12.3	17.9
Sardinia	2	2.4	3.6	2.4	1.1

Source: Bank of Italy.

(1) It refers to the number of CCBs whose headquarter is in the region, values at 31.12.2011.

Table A 14

Social capital variables by region

(Units and percentages)

	Ass_multi	Asspart	trust
Piedmont	31.3	-0.08	1.7
Valle d´Aosta	37.6	-0.08	1.7
Lombardy	33.8	-0.09	1.6
Liguria	26.8	-0.06	1.9
Trentino	63.1	-0.27	1.9
Alto Adige	59.3	-0.23	2.0
Veneto	40.9	-0.11	1.7
Friuli Venezia Giulia	40.6	-0.12	1.8
Emilia-Romagna	39.4	-0.05	1.7
Toscana	32.3	-0.03	1.6
Marche	35.6	-0.05	1.6
Lazio	23.4	-0.02	1.5
Umbria	33.4	-0.02	1.6
Abruzzo	27.6	-0.02	1.5
Molise	25.6	-0.03	1.5
Campania	23.2	-0.01	1.5
Puglia	22.4	-0.02	1.5
Basilicata	32.1	-0.05	1.5
Calabria	21.5	-0.05	1.4
Sicily	27.7	-0.06	1.6
Sardinia	41.4	-0.06	1.6

Source: Istat “Multi Purpose Survey on Italian Households: aspects of daily life” (2010).

Table A 15

Control variables by region

(Units and percentages)

	Density of population	Share of value added related to agriculture	Share of value added related to manufacturing	Per capita value added	Unemployment
Piedmont	163.5	2.1	31.2	24,113	4.6
Valle d'Aosta	38.3	1.4	25.0	26,555	4.0
Lombardy	492.1	2.2	37.1	26,906	4.4
Liguria	275.1	2.6	18.0	22,885	5.7
Trentino	81.9	3.1	26.4	26,661	4.0
Alto Adige	66.0	4.6	22.4	29,571	2.9
Veneto	270.6	2.1	35.7	26,350	4.3
Friuli Venezia Giulia	416.6	1.5	26.6	25,207	4.5
Emilia-Romagna	200.0	2.8	32.2	27,071	4.3
Toscana	229.0	2.6	27.5	23,936	5.3
Marche	194.7	2.0	32.6	23,804	5.1
Lazio	253.2	3.5	21.5	21,944	9.1
Umbria	104.9	2.2	28.1	20,875	5.7
Sardinia	85.0	5.0	19.2	15,383	12.1
Abruzzo	157.6	2.8	30.6	18,583	7.7
Molise	69.0	4.3	25.6	16,968	9.0
Campania	697.6	3.9	21.0	14,546	11.4
Puglia	248.7	4.6	22.7	14,691	13.6
Basilicata	59.3	6.0	25.0	16,307	11.2
Calabria	138.1	5.4	16.7	14,153	12.6
Sicily	184.2	5.3	18.4	14,330	14.0

Source: ISTAT

(1) Share of unemployed people over the overall population

Table A 16

Pairwise Correlations among variables

	CCBs' market share with SMEs	CCBs' market share on total loans	Non CCBs' local banks market share with SMEs	Non CCBs' local banks total market share	Asspart	Associations	Trust	Added value per capita	Density	Share of agriculture added value	Share of manufacturing added value
CCBs' market share with SMEs	1.000										
CCBs' market share on total loans	0.960*	1.000									
Non CCBs local banks market share with SMEs	-0.069*	-0.044	1.000								
Non CCBs' local banks total market share	0.007	0.040	0.961*	1.000							
Asspart	-0.464*	-0.468*	-0.058	-0.092*	1.000						
Associations	0.469*	0.427*	0.008	0.062	-0.590*	1.000					
Trust	0.309*	0.280*	-0.174*	-0.163*	-0.226*	0.212*	1.000				
Value added per capita	0.325*	0.244*	0.014	0.037	-0.344*	0.476*	0.318*	1.000			
Population density	-0.121*	-0.179*	-0.134*	-0.152*	0.070*	-0.079*	0.030	0.182*	1.000		
Share of agriculture of value added	0.027	0.099*	0.064	0.060	0.135*	-0.177*	-0.190*	-0.545*	-0.340*	1.000	
Share of manufacturing of value added	0.151*	0.110*	0.096*	0.117*	-0.268*	0.321*	0.149*	0.583*	-0.056	-0.409*	1.000
Unemployment	-0.135*	-0.093*	0.247*	0.221*	0.116*	-0.395*	-0.160*	-0.464*	-0.081*	0.315*	-0.302*

*Significance level 5%

Table A 17

The effects of social capital measured as both people joining associations and trust on CCBs and other local banks' market share (1)

	Model I		Model II		Model III		Model IV	
	a) Share of CCBs total loans	b) Share of CCBs loans to SMEs	a) Share of CCBs total loans	b) Share of CCBs loans to SMEs	a) Share of other local banks total loans	b) Share of other local banks loans to SMEs	a) Share of other local banks total loans	b) Share of other local banks loans to SMEs
associations	24.981*	34.890**			5.259	1.450		
	(14.588)	(17.604)			(10.992)	(13.007)		
asspart			-62.865***	-81.057***			-7.356	-3.102
			(23.872)	(26.959)			(19.314)	(21.865)
trust	6.526***	9.675***	5.456***	8.302***	-8.912**	-11.099***	-9.032**	-11.151***
	(2.183)	(2.905)	(1.953)	(2.666)	(3.998)	(4.155)	(4.106)	(4.137)
value_added	.0001	.0005	.0001	.0005	.0001	.0002	.0001	.0002
	(.0002)	(.0003)	(0002)	(.0003)	(.0003)	(.0004)	(.0003)	(.0004)
density	-.002	-.002	-.001	-.001	-.003	-.003	-.003	-.003
	(.001)	(.002)	(.001)	(.002)	(.002)	(.002)	(.002)	(.002)
sh_agr	.975**	1.182**	1.032**	1.260**	.173	.207	.184	.210
	(.417)	(.590)	(.424)	(.592)	(.708)	(.975)	(.714)	(.980)
sh_man	-.013	-.013	-.019	-.020	.146	.169	.146	.169
	(.102)	(.133)	(.099)	(.126)	(.130)	(.147)	(.131)	(.147)
unemployment	.246*	.359*	-.003	.017	1.091***	1.399***	1.043***	1.385***
	(.149)	(.216)	(.127)	(.200)	(.298)	(.328)	(.291)	(.322)
North East	5.579***	9.610***	6.855***	11.476***	3.743	3.944	4.085*	4.025
	(2.109)	(3.240)	(2.113)	(3.079)	(2.542)	(3.353)	(2.454)	(3.155)
Centre	3.082**	5.553**	5.903***	9.189***	-.006	-.584	.323	-.445
	(1.481)	(2.249)	(1.816)	(2.552)	(2.053)	(2.502)	(2.270)	(2.752)
South and Island	-.339	3.481	1.270	5.643	-.902	-1.555	-.637	-1.469
	(2.592)	(3.669)	(2.582)	(3.621)	(3.630)	(4.455)	(3.77)	(4.542)
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes
Constant	-17.815	-32.802	-12.728	-25.782	13.200	17.439	14.197	17.727
R-squared	0.35	0.40	0.43	0.45	0.17	0.17	0.17	0.17

(1) OLS pooled estimations. Coefficients are reported and (robust) standard errors are in brackets.
*Significant level at 10 per cent; **Significant at 5 per cent; *** Significant at 1 per cent.

7 Let's Vote! How the members' majority affects the credit cooperative bank pricing strategies[64]

7.1 Introduction

Among the features characterizing cooperatives, the democratic voting mechanism is one of the most relevant. The democratic voting procedure is important in a firm where ownership is dispersed, as cooperative. Voting is used to allocate resources and it guarantees an active participation of firm's owners—i.e. the members— in the management.

Cooperative banks are not an exception. Being a cooperative, they are characterized by a dispersed but strongly linked ownership structure; a "one-head one-vote" democratic voting system; and a non-for-profit aim, the use of a fraction of profit for mutual goals. The voting "one-head one-vote" rule disregards the quantity of shares owned, and weights equally the vote of each member. In particular, the right to vote is exercised by members during the annual general assembly when they are asked to approve the annual balance sheet. Implicitly they are required to approve the strategic choice done during the previous year by both the general manager and the directors sitting in the board. If the majority in the assembly is contrary to the strategic choices of the management, the rejection of the balance sheet will cause the fall of the board and possible dismissal of the manager. Thus, both the board and the manager are expected to implement policies, which at least will please the majority of the members.

Given the non-for-profits constraint, members in Italian CCBs are mainly remunerated with better conditions on financial activities, while the use of dividends is less common. CCBs can devote part of their earnings to supply financial services to member at better conditions. For instance, members can benefit from a higher interest rates on deposits compared to non-members. However, the choice made by the CCB on how to reward members has different implication among members. Members could be either borrowers or depositors. If for example a member has borrowed money from the CCB, he/she will benefit from a reduction of interest rates on loans. However, the same choice will not benefit the members who hold just a deposit account. These members will prefer to address the bank's earnings to increase the interest rate on deposits. Furthermore, if the difference between member and non-member interest rates on loans is higher compared to the member-non member spread on interest rates on deposits, depositors could blame that the CCB is biased throughout borrowers.

The aim of this chapter is to investigate whether the composition of the majority (in terms of

[64] Joint chapter written together with Maria Lucia Stefani (Bank of Italy, Trento branch, Italy). The opinions expressed in this paper are those of the authors and do not involve the responsibility of the Bank of Italy.

either borrowers or members) in the general assembly determines biasness in the interest rate pricing policies of the CCB in order to favour one group of members towards the other. In particular, the idea is to verify whenever the majority composed mainly by borrowers (depositors) to depositors (borrowers) plays a role in increasing the average costs of deposits (decreasing the average earnings on loans) and increasing or not decreasing the average earnings on loans (increasing or not decreasing the average costs of deposits). First, this issue has been investigated through a theoretical model based on the median voter theory à la Hart and Moore (1996) applied at the Italian CCBs. Secondly, an empirical analysis has been performed through econometric tools on a panel of 411 Italian CCBs in the period from 2004 to 2009 to assess the relationship between the shift in the voting majority and the changes in the interest rate pricing.

The chapter is organized as follows: Section 2 reviews the relevant literature; Section 3 defines the objective function of Italian CCBs; Section 4 introduces the theoretical model which is used to analyses the voting mechanism in the general assembly; Section 5 presents the panel date used and the results from the econometric estimation; Section 6 draws some conclusions.

7.2 Literature review

The relevant literature for this chapter is mainly grouped into two sets: (i) the Median Voter literature applied to cooperatives, (ii) the empirical studies on the Italian cooperative banking industry. Theoretical studies describing the behaviour of credit cooperatives have been developed as an adaptation of models used to describe the behaviour of standard firm. However, the theoretical arguments developed for traditional enterprises cannot be applied directly to cooperatives, and in particular, to cooperative banks, since their goals differ substantially.

As Smith and al. (1981:519) stated[65], there are two characteristics which make cooperative banks different: (i) members are simultaneously owners and customers of the outputs and suppliers of inputs; (ii) both the demand and the supply sides are intermediated in the same enterprises, since the bank includes both member-borrowers and member-depositors. This is applicable to the Italian CCBs as well. Not having profit-maximization as a goal, economic theory forecasts that, under perfect competition, cooperatives will not be able to maximize consumer and producer surplus. CCBs redistribute their profit through price subsidies—i.e. through lower interest rate on the loans

[65] The authors were referring to the experience of credit unions, a particular type of cooperative banks. A credit union is not-for-profit financial institution owned and operated entirely by its members. Credit unions provide financial services for their members, including savings and lending. Large organizations and companies may settle credit unions. Different from cooperative banks, in order to join credit unions, a person must belong to a participating organization, such as a college alumni association or a labour union. Moreover, credit unions are usually deposit banks, while cooperative banks are active on the lending side. Credit unions are mainly present in the Anglo-Saxon area, while cooperative banks are typically located in Germany, Italy, France, Spain, but also Holland, Finland, Greece and other Eastern European countries.

or higher interest on deposits that on the one hand distort the “invisible hand” of the market, but on the other hand make it possible to realize what is stated in their objective function (Hart and Moore, 1998).

However, this leads to a conflict among members, since borrowers and depositors have not only different, but sometimes, opposite utility functions. Even though both types of members gain from better interest rates compared to non-members, the conflict on the allocation of benefits will arise internally. The solution to the conflict is based on the prevalence of one type of member over the other (Smith et al., 1981; Emmons and Schmidt, 2000). Given that the means to allocate resources is the voting mechanism, which is based on the democratic majority rule, the presence of a majority will address the policies of the CCB so as to satisfy the majority of members at the least. As underlined by Barzel and Sass (1990), in order to have a theory of voting, it is necessary to explain the conditions under which voting is chosen as a mean to allocate resources, and how this tool is structured. According to their view, cooperatives behave mainly as a political organization. However, while the “one-head one-vote” rule is used almost exclusively in politics, in the context of corporate voting “one-share one-vote” dominates.

As underlined by Emmons and Mueller (2000), when the median voter shifts from borrower to depositor, the cooperative bank changes its strategy from keeping interest on loans low to raising the price of credit. The median voter model used to analyse the voting mechanism in cooperatives is the one introduced by Hart and Moore (1996, 1998) to analyse the decision-making in consumer cooperatives. According to their conclusions, both cooperatives and outside ownership enterprises are inefficient solutions, even though their inefficiencies are of different nature. The inefficiency in a cooperative is due to the fact that a decisive voter who might not be representative of the membership as a whole drives the decision-making process. Even though both in cooperatives and outside ownerships the result is an inefficient choice, in the case of cooperative enterprises, where member’s interests are not homogenous, the democratic voting rule leads to a less inefficient solution (Hart and Moore, 1996).

Contrary to the previous theoretical results, a branch of the literature defines cooperatives as an efficient solution for allocating control to two or more individuals, who are the owners of the cooperative itself. Hansmann (1988, 1996) and Holmstrom and Milgrom (1994) have underlined how the ownership structure of firms impacts the costs of market contracting by reducing transaction costs. Given the differences in the contracts offered by the firm to each class of owners, the transaction costs will be differentiated among owners and, as a result, the firm will have different levels of economic efficiency. Furthermore, when workers or customers are the owners of the firm, the ownership structure is used as one of the means (among others) for providing

incentives to different stakeholders (Turati, 2004). The efficiency in cooperative banks is related on the one hand to members' interests in the maximization of the social welfare, on the other hand, to the minimization of the preferential gap between the borrowers and depositors (Altunbas et al., 2001).

The empirical literature concerning both case studies at country level and international comparisons is even more voluminous than the theoretical one. Most of the papers focus on credit unions in the U.S., which are similar to cooperative banks due their governance structure, even though there are differences with respect to their membership's characteristics. U.S. credit unions pay a trivial member dividend, if any, out of the operating surplus, like CCBs (Taylor, 1971; Flannery, 1974; Smith, Cargill, and Meyer, 1981; Smith, 1984, 1986; Patin and McNeil, 1991). The decisions about the allocation of their surplus, and consequently about which type of members to privilege more than the other, goes according to the interest rates charged on loans and deposits (Emmons and Schmid, 2000). However, in a previous paper, Smith (1986) has argued that credit unions treat borrowers and lenders equally in terms of their distribution policies. Credit unions are, however, fundamentally different from cooperative banks, since their membership is homogenous. Emmons and Mueller (1997), analysing cooperative banks, show that a shift in the median member from a predominantly borrower oriented towards being predominantly lender orientated causes a shift in the pricing policy of the cooperative bank from an under-pricing credit towards the provision of competitively priced credit and deposit services. The theoretical model is translated into a descriptive analysis of the German cooperative banks. The conclusion driven is that the cooperative structure applied to a bank is flexible enough to adapt to the changes in the membership characteristics.

As underlined by Zamagni (2012), the democratic rule based on the "one-head one-vote" favours the median voter who will see his goal realised, while the costs of the decision taken have to be equally split among members. The main risk, in the case in which the general assembly is characterized by numerous interest groups, is either the incapacity to take any decision by voting or the *de facto* transfer of the decision power to the management. The conflict in the general assembly is quite common especially when members don't fully identify with the CCB's objective but they follow their own goals. Even though members share the principles that lead CCBs, they may have different or even contrasting views about the private benefits they would like to get from their participation in the cooperative as members.

This chapter attempts to put together the institutional and the governance literature on cooperative banks focusing on the Italian case of CCBs, testing the theoretical results empirically. The median voter theory applied to cooperatives will be taken as the framework according to which

an empirical model will be estimated through econometric tools.

7.3 The objective function of CCBs

Members in a CCB are of two types: borrowers and depositors. As underlined by Emmons and Schimd (2000), their goals are opposite. Borrowers get benefits from a reduction in the interest on loans, which will cause a reduction of bank's earnings. Depositors ask for an increase in the interest rates on deposits, which in turn will increase the banking costs. The reduction of bank's earnings could lead to a reduction in the interest rate paid to depositors as well. An increase in the interest rates paid on deposits by increasing the expenditure could result in higher interest rates on loans. However, the higher interests on deposits could reward both depositor and borrower, who usually have a deposit account in the bank. Earnings and costs are redistributed among members according to the anticipation of their willing. The manager will share benefits in order to match the expectations of the general assembly, or at least of its the majority. If the majority is satisfied with the strategic choice made by the management regarding the redistribution of benefits, it will implicitly approve them through the approval of the annual balance sheet. The manager puts a lot of effort in order to avoid a rejection of the balance sheet since a negative result will cause administrative problems for the bank and will built up a negative reputation for himself and for the directors in the board.

In order to describe the possible preferential choices made by CCBs, the Smith et al. (1981) model suggests an interesting framework. Even though originally developed for credit unions, the model can be applied for the case of Italian CCBs, since their objective function aims at maximizing the value for members and the non-redistribution constraint does not allow for other relevant benefits for members. However, unlike the case of credit unions where almost all customers are also members, CCBs include member and non-members customers (borrowers or depositors). Members in this case should have a preferential treatment compared to the non-member customers. According to this fact, some modifications to the original model need to be made in order to have a more realistic model that describes CCBs behaviour.

In their framework, Smith et al. (1981) use a weight to describe the preference of the credit union for Net Gain on Loans (NGL, defined as the difference between the loan rate of the credit union and the market rate times the amount of the loans; in the case of CCBs this difference can be interpreted as the gap between member and non-member interest rates on loan multiplied by the amount of loans to each category of costumers, where the interest rate for member is lower or not higher than the interest rates charge to non-members), the preference for Net Gain on Deposits (NGD, the rate difference on deposits times their amount; in the case of CCBs it is the difference between member and non-member interest rates on deposits, where the interest rate for member is

higher or not lower than the interest rates of non-members), and profits. The scalars λ and σ, scaled in between 0 and 1, are the weights in the objective function and they define the priority of the bank. The objective function has the following specification:

$$\max_{r_l r_d} \boldsymbol{\lambda NGL + \sigma NGD + \pi} \quad \textbf{(1)}$$

The constraints under which the above maximization has to be computed are:

1. **Balance sheet constraint**: L-D=M with L≥0, D≥0 and M≥≤0. Whenever L>D, it will be more convenient to borrow liquidity from the central bank, while if L<D the choice will be to make money through market investment;
2. **Non-negative operating surplus**: $\pi = r_l L + r_d D - r_M M - (C_l L + C_d D) - \bar{E} \geq 0$, where r_l identifies the rate of loans, r_d is the rate of deposits, and r_M is an exogenous rate (the market rate) with an equal value for debt or investment. The terms in the brackets define the costs associated with processing loan and savings, while E is the sum of all fixed expenditures and creation of reserves.

Moreover, the assumption on the specification of the demand is:

3. **Linear specification of loan demands and deposits**: $L = \alpha(r_{lM} - r_l)$ and $D = \beta(r_d - r_{dM})$ with α, β>0. The demand for loans and the attractiveness of deposits are determined by the spread between the cooperative rates and the alternative market ones, which are taken as exogenous. In the case of CCBs, the loan and deposits demand of members are functions of the internal spread between members and non-members, and are not directly affected by the market rate.

The optimal choice of r_l* and r_d * would maximise the function of the net gain available to members under the balance sheet constraint and the non-negative operating surplus constraint. After defining the model, the authors describe four scenarios given by the possible combination of values of the parameters λ and σ. The four scenarios are a starting point to interpret the strategic choice of CCBs relative to which type of members to reward preferentially.

Case 1: λ=0, σ=0, Maximum Surplus

In this case, the cooperative bank is behaving as a profit-maximizing intermediary, not giving any benefits to its members. The interest rate on loans is determined by the interest rate of the intra-bank funding plus the interest rate margin issued by the cooperative bank and based on the market rate net of the costs of lending. The interest rate on deposits offered to members is computed in the same way. This strategy has to be interpreted as a benchmark. In fact, it is not easy for CCBs to follow a *maximum surplus* strategy given their non-profit aim. CCBs send a relevant share of their profits to legal reserve and to the Mutual Fund. The reaming part can be capitalised. However,

members will prefer to address these funds to subsidize either depositors or borrowers in terms of interests rate. The possible result given by a *maximum surplus* strategy is a not approval of the annual balance sheet during the general assembly since owners will not benefit from the increased surplus.

Case 2: $\lambda=1$, $\sigma=0$, Complete Borrower Orientation

The objective function in this case is given by the maximization of NGL, subject to the nonnegative surplus constraint for π. The optimal rate on loans is lower than the one formulated in the benchmark case by an amount directly related to the demand function of deposits and inversely related to the demand function of loans. The higher is the amount of deposits compared to the amount of loans, the higher will be the reduction of the interest rate on loans offered to members compared to market rate. The higher the quantity of deposits, the greater is the capability of the cooperative bank to internally finance its loans. The optimal interest rate on deposits has not changed from the benchmark one, given the zero value of σ.

Interpreting this result for CCBs, it can be said that a larger number of borrowers compared to depositors should result in lower interest rates on loans since the all the CCB surplus will be addressed to subsidy borrowers' interest rates. This extreme situation assumes any preferential to depositors, not even a spread on the interest rates on deposits between members and non-members, which is unrealistic. Instead of having a complete borrower orientation, it is possible to have a partial preference for borrower as long as $\lambda>\sigma$. The nonnegative constraint is binding, and the optimal profit will be set equal to 0.

Case 3: $\lambda=0$, $\sigma=1$, Complete Depositor Orientation

Contrary to the previous scenario, in this case the cooperative bank tries to maximize the gain of the depositors, disregarding the benefits for borrowers. Once again, the nonnegative constraint is binding and π is equal to 0. Compared to case 2, in this case the interest rate on loans is equal to the profit-maximizing case, while the interest rate on deposits is a function of the loans-to-deposits demand ratio. The deposits interest rate is determined by the interest rate received by the bank due to external financing plus an amount directly related to the demand for loans and inversely related to the amount of deposits. The higher the amount of deposits the higher are the costs for the bank and the lower will be the possible earnings to be redistributed. On the contrary, the higher are the loans, the higher the earnings, and possibly, the higher is the remuneration to the depositors. With a perfect depositor orientation bank, borrowers suffer from very high interest rates. In the case of CCBs, interest rate on loans should not be higher than the one offered to non-members.

Case 4: λ=σ, Equal Treatment

This case represents a perfect balance between the cases 2 and 3: the cooperative bank is indifferent between a strategy that reduces the interest rate for borrowers or that increases interest rates on deposits. Keeping the surplus constraint binding, the optimal rates that maximize the welfare of borrower and depositors simultaneously are inverse functions of both demands for loans and for deposits. According to this formulation, the benchmark interest rate on loans will be reduced by the same quantity that will be added to the interest rate on deposits. It has to be noted that for any given level of fixed costs, the optimal interest rates derived in case 4 are less preferred by selfish agents—i.e. borrowers will receive better rates in a borrower oriented cooperative bank and so will depositors in depositor oriented cooperative bank.

The framework described above needs further consideration in order to be applied to the CCBs case. The way to address this issue in the Smith et al. (1981) framework is by splitting the total amount of loans and of deposits into members and non-members. The demand functions will be the sum of the members and the non-members demand, the first being determined by the difference between the member and the non-member rate, the second by the difference between the non-members and the market interest rate. The resulting optimization problem is broader, and the optimal rates of interest are four: interest rates on loans for members, interest rates on loans for non-members, interest rates on deposits for members, interest rates on deposits for non-members. However, the relationship derived by cases 2, 3 and 4 between the interest rates and the demand functions will not change.

The question that arises is: how does a cooperative bank, and a CCB in particular, choose among one of the four cases described to set a reward strategy for its members? The bank management according to the membership willingness should make the strategic choice concerning the value of λ and σ. In order to get the approval of the general assembly, the choice made should at least please the majority of members, and in particular, should please the median voter.

7.4 Voting for a preference

The basic idea developed in this paragraph is that a CCB will decide its reward strategy according to type of members holding the majority of votes. The forum through which the members express their preferences is the general assembly. The importance of this assembly is given by the fact that it has the approval of the annual balance sheet in its agenda. The annual balance sheet includes the distributive policy addressed to members such as a reduction in the interest rates on loans (subsidies on loans) or an increase in the interest rates on deposits (subsidies on deposits). The manager as well as the director wants the balance sheet to pass. The most obvious choice is to decide for

strategies that please at least the majority of members. The objective is to maximize the welfare of the median voter in order to have at least the fifty per cent of the assembly voting in favour of the balance sheet.

Following the example described by Hart and Moore (1996), it is possible to picture the case of an Italian CCB as a median voter issue. The distinction between borrowers and depositors is theoretical, because in the real world a member might be either a pure depositor, not granting loans from the CCB, or borrower-depositor by holding a deposit account and simultaneously by borrowing money from the CCB. The case of a pure borrower is unrealistic. Members that have received loans from the CCB and simultaneously have deposited funds will be considered "mainly" borrowers. Given the non-discriminatory principle of cooperatives, members are charged the same entry fee per share, with no discrimination according to their types, given that the CCB is not able to discriminate between members, at least at their entry. Furthermore, none of the two types of members will receive dividends based on the amount of shares owned.

It is possible to classify members on a continuous theoretical line that goes from 0 to 1 and has on the right-hand the pure depositor and on the left-hand the pure borrower. Moving from the right to the left, the weight of loans on deposits increases. Assuming that the distribution is skewed towards depositors, the member placed in the middle of the distribution holds an amount of loans with the bank such that he is indifferent between an increase in the interest rate on his deposits and a reduction of the interest rate on his loans[66]. The differentiation between depositors and borrowers is not stable throughout. Even though their interests are conflicting, some members might actually switch, in the short period, from being depositors to borrowers. This creates some ambiguity in their preferences.

The manager has to define a balanced redistribution strategy to reward the members so that the majority will approve the annual balance sheet with the highest probability. Let consider four scenarios among which the manager has to pick the one that maximises the welfare of the median voter. The four scenarios can be also linked with the four cases of the Smith et al. (1981) analysis:

Option A: redistribution of all the resources to subside a lower interest rates on loans (Case 2: $\lambda=1$, $\sigma=0$);

Option B: redistribution to reward both groups of members equally (Case 4: $\lambda=\sigma$);

Option C: redistribution of resources to increase the interest rate on deposits, keeping the interest on

[66] The case arises when the net gain from loan is equal to the net gain from deposit—i.e., the value of the interest rate multiply by the amount of loan or the quantity of deposits. Usually, since the interest rates are lower in the case of deposits, this situation is verified when the member has a larger amount of deposits with a lower interest rate and a small quantity of loans with a higher interest rates: a small increase in the interest rate of deposits compared to the market one will reward the member at equally to a larger reduction of the interest rates on loans compared to the market one.

loans for members still profitable (Case 3: $\lambda < \sigma$);

Option D: charge a higher interest rate on loans, almost equal to the non-member one, and send all the revenues to subsidize deposits (Case 3: $\lambda << \sigma$).

Option A is preferred by the borrowers, since, similar to case 2, it completely rewards the borrowers compared to the depositors. "Pure" borrowers have the following preference structure:

$$A \succ B \succ C \succ D \quad (2)$$

"Pure" borrowers prefer options with the higher value of λ, compared to σ. Option A guarantees the lower interest rates on loans (λ=1), while option D implies the lower returns for borrowers ($\lambda << \sigma$) (Table 8). However, pure borrowers do not exist in practice since in order to be a borrower, it is required to be a depositor as well.

Option B described by case 4 in the Smith et al. (1981) paper should be preferred in a cooperative institution. However, even though the organization is non-for-profit, individuals are usually not. Selfish members are those interested in achieving the highest reward from their membership, while the fair members are more interested in the equal sharing of benefits among members. The fair sharing of benefits might not be a strategic option to be proposed to the general assembly. According to case 4, by increasing the denominator of the optimal interest rates, the benefits of either depositors or borrowers are reduced compared with case 2 or 3. Moreover, since it does not favour the median voter, it will be hardly approved by the general assembly[67]. If it exists, the "fair" member will show the following preference structure:

$$B \succ C \succ D \succ A \quad (3)$$

The "fair" member derives its utility from the lower distance between λ and σ. According to this principle, B is the favourite option (λ = σ), while A is the less preferred one (λ =1, σ=0) since the distance between the two parameters is the highest.

Option C is the most favoured by "mainly borrowers". The main problem with this typology is that its preferences are not clear-cut. "Mainly" borrower is a member who has granted money from the CCB but he/she holds deposits in the bank too. Since he/she can earn from deposits, the preference for a lower interest rate on loans can be substituted by a higher interest rate on deposits. Option C, described by case 3 in the Smith at al. (1981) model and adapted for CCB by weighting σ more than λ, will be voted by "mainly" borrowers. This option guarantees competitive interest rates on loans compared to the non-member one and at the same time it remunerates the deposits that "main borrowers" hold too. The preference relation of "mainly" borrower is:

[67] The implicit assumption is that members are voting according to a selfish behavior. The presence of members who could be inequality adverse is not considered. Even though members could be inequality adverse, the strategy of perfectly sharing benefits among the two types seems to be less realistic and difficult to implement.

$$C \succ D \succ B \succ A \quad (4)$$

The "main" borrower prefers options in which CCB rewards both its borrower's and its depositor's nature. Option C guarantees better lending conditions compared to option D, while option A is the less preferred since it does not remunerate at all its deposits.

Option D is preferred by "pure" depositors and by those depositors who do not intend to borrow money in the short term. This case is similar to case 3, but here σ is much higher than λ, even though there is an incomplete depositor orientation. The reason for an incomplete depositor orientation is due to earnings being related to lending. If the policy of the CCB is completely biased towards depositors, borrowers will switch to another bank. The final result would be a drastic reduction of the CCBs earnings that will determine a lowering of the interest rate paid on deposits. The preference relation for pure depositors is:

$$\boldsymbol{D \succ C \succ B \succ A} \quad (5)$$

where D assures σ to be much higher than λ, more than in C and in B.

The manager knows the composition of the general assembly ex-ante in terms of depositors and borrowers types. However, he/she cannot distinguish between selfish and fair members. Given this uncertainty, option B is the most challenging one and it will not be offered. As already mentioned, "pure" borrowers do not exist and so option A is not considered. On the contrary, option C and option D are the ones that reward depositors directly and indirectly benefit borrowers who hold a deposit account. The choice between the two will be based on the composition of the general assembly. However, given the mixed nature of "mainly" borrowers, it will be difficult for the manager to exactly pick the right option.

Table 8

Preference relations per Member's Type

Member's Type	Preference structure	Parameters
Pure Borrower	$A \succ B \succ C \succ D$	$(\lambda = 1) \succ (\lambda = \delta) \succ (\lambda < \delta) \succ (\lambda \ll \delta)$
Fair Member	$B \succ C \succ D \succ A$	$(\lambda = \delta) \succ (\lambda < \delta) \succ (\lambda \ll \delta) \succ (\lambda = 1)$
Main Borrower	$C \succ D \succ B \succ A$	$(\lambda < \delta) \succ (\lambda \ll \delta) \succ (\lambda = \delta) \succ (\lambda = 1)$
Pure Depositor	$D \succ C \succ B \succ A$	$(\lambda \ll \delta) \succ (\lambda < \delta) \succ (\lambda = \delta) \succ (\lambda = 1)$

In order to put some light on the strategic choice actually made by CCBs, an ex-post analysis have been done. The question that the empirical tests try to answer is: What is the impact of borrowers' vs. depositors' majorities on the choice between option C or D?

7.5 The Model

To empirically test the median voter framework, the model splits the group of members into two: borrowers and depositors. Depositors are defined as members who have not currently borrowed money from the CCB, while the borrowers are depositors who also have a loan from the bank. Apart from the financial product that the CCBs supplied them, the two groups of members are identical. Let δ ($0 \leq \delta \leq 1$) be the fraction of borrowers, while $\eta = 1-\delta$ is the fraction of depositors. Whenever $\delta > \eta$, the CCB is run by a borrowers' majority.

The model assumes that all members will sit in the general assembly and will all vote. Customers who are not members are not allowed to sit in the general assembly. It is also assumed that a CCB has no other use for its earnings other than distributing it to the members. Individual preferences are single-peaked (Milanovic, 2000). This implies that the median voter type has a decisive role in determining the level of the redistribution direct to his/her type. The median voter must gain from the redistribution process to vote in favour of the suggested plan. However, it is not the case that he/she gains more than anyone else who, for example, has more deposits. Actually, the larger is the gain in absolute terms, the less is the gain, in relative terms, received by the median voter since he/she is the one with the smallest difference with the non-majority type.

The implicit assumption is that CCBs work with the aim of increasing the welfare of their members. The stylized model introduced here implies that the nature a non-for-profit bank is summarised by two defining features. Firstly, the CCB has no direct incentive to create profits. Any surplus on its activities is either used to build up reserves, while the remainder is distributed to members as interest rate subsidies. Secondly, it is assumed that the policies of the CCB are set in order to maximize the surplus of a sub-set of members, compatibly with its objective functions. It is a common assumption in the literature on credit unions that these banks maximise some portion of consumer surplus (e.g. Taylor, 1971, and Smith et al., 1981, Canning et al., 2003). The goal is to identify which option is the one followed by CCBs in practice. In order to reach this goal, the hypotheses to be tested is:

> *The majority of borrower (depositors) impacts the average earnings (costs) on loans (deposits) by reducing (increasing) them.*

This hypothesis aims to verify whether the majority of voters will address the strategic price policy of the CCB. The test is based on the significance value of the parameter β_1 in the fixed effect regression model (6):

$$avearings = \beta_0 + \alpha_j + \beta_1 d\_majority\_borrowers_{it} + \gamma controls_{it} + u_{it} \qquad (6)$$

where *avearnings*[68] represents the average earnings on member's loan and it could be considered as a proxy for the interest rates asked on loans for members, *d_majority_borrowers* is a dummy which take value 1 when $(\delta/(\eta+\delta)) > 0.5$, and *controls* is a vector of control variables which includes the number of clients and members of the banks. A similar model is used to test the hypothesis using as dependent variable the average costs[69] as a proxy for the interest rates on deposits.

The data used in these analyses are borrowed from Bank of Italy's Supervisory Reports and cover the period from 2004 to 2009. In particular, information on CCBs refers to all Italian banks belonging to this category (411 CCBs), apart from those for which the data were not available for all the periods covered, because they ceased their activity for reasons other than mergers or acquisitions (namely, liquidation).

7.6 Results

Descriptive statistics show that in the period from 2004 till 2009, the average value of $\delta/(\eta+\delta)$ for Italian CCBs has been equal to 42.8 per cent, describing a situation in which the depositors are the majority among members on average. However, analysing this value by size, the share of borrowers over depositors increases with the decrease of CCBs' size. The lowest rate is the one registered by large CCBs (37.9 per cent) that seem to be more reluctant to grant while the highest one is the share registered for small CCBs (47.0 per cent). Moreover, looking at the macro areas, in the North the average share value is below the national average (in the North East is equal to 40.9, in the North West is 39.9), underling a higher saving propensity in the North compared to the rest of the country. The highest value is registered in the Centre, with a share of 45.7 per cent, two percentage points more than in the South.

In order to test the hypothesis, the dependent variable has been analysed using both the actual value and its rate of growth. Given its feature of linking two years, the rate of growth describes a more dynamic setting compared to the regression with only levels. The results concerning the median voter hypothesis test are summarized in Table 9, while Table A 18 and A 19 show the complete results of FE regression model. In Table 9, the first row indicates the preferential relation as given by the theoretical frame, while the second row summarizes the sign and the significance level of the relevant variable, the majority of one of the two types of members.

[68] The average earnings on loans have been computed as (revenues on interest on loans on members)/(0.5*(amounts of loans at t-1+ amounts of loans at t)).

[69] Similar to the average earnings, the average costs have been computed as the costs of interest for deposits/(0.5*(amounts of deposits at t-1+amount of deposits at t)).

Table 9

The median voter hypothesis test

		Average earnings on loans	Growth rate of average earnings on loans	Average costs of deposits	Growth rate of average costs of deposits
Majority of borrowers	Preference structure	$C \succ D \succ B \succ A$			
	Estimated sign	positive*	positive	positive **	positive**
Majority of depositors	Preference structure	$D \succ C \succ B \succ A$			
	Estimated sign	negative	negative	negative *	negative

**Significant at 0.5, *significant at 0.1

The results underline that option D is the one chosen by the manager in case of the majority being composed by borrowers. Thus the CCB will set a higher interest rate on deposits (the estimated sign is positive and significant) and simultaneously a higher interest rate on loans (the estimated sign of the average earnings is positive and significant). This result depicts a situation that "pure" borrowers will not prefer. However, option D is the second best option for "main" borrowers, and the best option for "pure" depositors. The scenario that emerges seems to be driven by a compromising strategy between the two preferential schemes of the two types of members. It is not a strategy that creates a net bias towards borrowers.

More borrowers translate into more earnings for the CCB. The increase in earnings is a way to pay higher interest rates on deposits. "Mainly" borrowers are rewarded by the choice of option D since they are indirectly remunerated by gaining more on their deposits and by being charged an interest rate on loans still lower than the non-member one. "Pure" depositors directly benefit from the increase in the interest rates on deposits. At the end, the option chosen will not create conflicts among members and will lead to the approval of the annual balance sheet with higher probability.

However, if depositors compose the majority, neither option C nor option D describe what emerges from the empirical results. The impact of a larger number of depositors on the average earnings from interest rate on loans is not significant, while it has a negative and significant impact on the average costs of deposits. The median voter model does not account for such an option. However, considering the Smith et al. (1981) optimal interest rate of deposits, hints can be found to interpret this result. According to the complete depositor oriented scenario (case 3), the increase in the quantity of deposits reduces the interest rate of deposits. Even though the median voter model does not describe this situation, it seems plausible to verify that a higher number of depositors increase the costs of the CCBs, which in turn has kept within a certain range. In order to avoid an

uncontrolled increase of costs, the best choice is to reduce the remuneration of deposits. Moreover, if the CCB is not facing a liquidity shortage, it does not need to attract funds by paying a higher interest rate.

Considering the growth rate of the average values of earnings and costs, the results about the impact of the both type of majority are the same: a borrower majority accelerates the growth of earnings and costs, while a majority of depositors slows the growth. However, the only significant coefficient is the one concerning the majority of borrowers positively related with the growth rate of the costs on deposits. When borrowers are the largest shares, the CCB increases the rate of growth of costs to reward depositors and borrowers. At the same time it does foster the growth of the interest rates on loans. Once the depositors are a larger proportion of members, the CCB tries to control the costs and it slows the growth of payments on deposits, while it will need to charge more on borrowers to pay an increasing interest rates on members' majority.

To sum up, in case of a depositors' majority none of the situation indicated by the median voter model seems to be verified. In particular, the depositors' preference structure is not confirmed by data. A more biased distribution towards the depositors does increase the costs for CCB, reducing the interest rate paid on the deposits. This situation is consistent with the definition of the optimal interest rate on deposits in a depositor-oriented bank, as theorised by Smith et al. (1981). When borrowers represent the majority, a situation similar to what was forecasted by option D occurs. Even though option D is only the second best option for "mainly" borrowers, it allows the manager to satisfy both types of member. This strategy allows a redistribution of benefits that will not cause conflicts during the general assembly between the two groups of members.

7.7 Conclusion

The goal of this chapter is to empirically test the theoretical hypotheses of the median voter model. Following this framework, a CCB, being a cooperative, should redistribute benefits to its members according to median voter type in order to assure the approval of the annual balance sheet in the general assembly. The model, when translated into an empirical test through a fixed effect regression, indicates option D as the most reliable when borrowers compose majority. Less clear results emerge for the case of a depositors-driven majority. In order to frame results concerning a depositors' majority the Smith et al. (1981) model seems to offer a more plausible explanation.

Borrowers seem to play a more determinant role in addressing the redistributive policies of the CCBs. The presence of more borrowers increases the earnings of the banks. Moreover, their dual nature of being borrowers and depositors makes them a strategic stakeholder to whom the manager and the directors should devote more attention once they plan CCBs' development strategies. On the contrary, a larger share of depositors is not so profitable for the CCB, since it

increases the costs, unless the CCB is suffering from liquidity shortage. Keeping the interest rates on deposits low, even in presence of a large share of pure depositors, is a way to guarantee some margin for the CCB and to control the cost-income efficiency level. At the end, both these elements will favour the growth of CCBs.

This chapter shows that, given its cooperative nature, the best choice for a CCB is to find a way to please simultaneously both type of members. Differently from what theorized by Smith et al. (1981) and by Emmons and Schmidt (2000), in the case of CCBs the solution of the conflict among members is based on a compromising solution that cares about depositors' and borrowers' expectations. Favouring just one type of member per time is a choice that does not take into consideration the complex and changing nature of members. It is a narrow strategy that will not be sustainable in the medium and long term. The analysis performed here suggests two possible strategies to reward members. First, if the increase in the interest rate of deposits is sufficiently supported by earnings, this is the best policy to pursue to simultaneously reward all members. Second, if, on the contrary, the costs of sustaining a higher interest rate on deposits are too large compared to the earnings, the best option to pursue is a sustainable police by improving the level of the cost-income ration and the level of the interest margins.

Table A 18

The voter majority test (1)

	Average earnings on loans		Average costs of deposits	
	(a)	(b)	(a)	(b)
Majority borrowers	0,005*		0,015**	
	(0,003)		(0,007)	
Majority depositors		-0,003		-0,013*
		(0,003)		(0,007)
Number of borrowers	0,000	0,000	-0,000	-0,000
	(0,000)	(0,000)	(0,000)	(0,000)
Number of depositors	-0,00001	-0,00001	-0,0001***	-0,0001***
	(0,000)	(0,000)	(0,000)	(0,000)
Number of non members	-0,000	-0,000	0,000	0,000
	(0,000)	(0,000)	(0,000)	(0,000)
Loans over deposits	0,003	0,003	-0,022	-0,021
	(0,014)	(0,015)	(0,032)	(0,033)
Total assets	0,055*	0,060**	0,086	0,101
	(0,030)	(0,030)	(0,067)	(0,067)
ROA	0,769	0,764)	1,273	(1,238)
	(0,522)	(0,529)	(1,182)	(1,193)
Cost-income	-0,001	-0,001	-0,004*	-0,004*
	(0,001)	(0,001)	0,002	(0,002)
Tier1	0,00005	0,0001	0,002*	0,002*
	(0,0005)	(0,001)	(0,001)	(0,001)
Non performing loans	-0,00002	-0,00004	0,0001	0,0001
	(0,0003)	(0,0003)	(0,001)	(0,001)
Net interets on net margins	0,001	0,0005	0,002***	0,002***
	(0,0004)	(0,0004)	(0,001)	(0,001)
HHI	0,189**	0,190**	0,316*	0,328*
	(0,077)	(0,078)	(0,174)	(0,177)
Brahces incidence	-0,015	-0,014	-0,026	-0,026
	(0,020)	(0,020)	(0,046)	(0,046)
Reference area	-0,038	-0,041	0,077	0,066
	(0,033)	(0,034)	(0,075)	(0,076)
GDP growth	0,032	0,011	-0,240	-0,298
	(0,110)	(0,110)	(0,249)	(0,249)
Unemployment	0,004**	0,004**	0,007*	0,007*
	(0,002)	(0,002)	(0,004)	(0,004)
Member-non-member differences on loans' interest rate	-0,084	-0,081	-0,623**	-0,620**
	(0,118)	(0,119)	(0,267)	(0,270)
Member-non-member differences on deposits' interest rate	-0,015	-0,017	0,490*	0,485*
	(0,113)	(0,114)	(0,255)	(0,258)
Cons	-0,831	-0,892	-2,307	-2,506
R-squared	0 .54	0.53	0.61	0.61

(1) FE estimations

*Significant level at 10 per cent; **Significant at 5 per cent; *** Significant at 1 per cent.

Table A 19

The voter majority test: the growth rate (1)

	Growth rate of average earnings on loans		Growth rate of average costs of deposits	
	(c)	(d)	(c)	(d)
Majority borrowers	0,274		0,426**	
	(0,172)		(0,208)	
Majority depositors		-0,167		-0,267
		(0,175)		(0,214)
Growth of borrowers	-0,515	-0,495	-0,493	-0,463
	(0,620)	(0,628)	(0,753)	(0,768)
Growth of depositors	-0,709*	-0,788**	-0,892*	-1,010**
	(0,379)	(0,384)	(0,460)	(0,469)
Growth of non members	0,038	0,022	0,091	0,067
	(0,117)	(0,118)	(0,142)	(0,145)
Loans over deposits	1,018	1,017	1,162	1,163
	(0,836)	(0,848)	(1,014)	(1,037)
Total assets	1,490	1,766	1,965	2,394
	(1,684)	(1,697)	(2,044)	(2,075)
ROA	-60,449**	-61,438**	-49,369	-50,911
	(29,806)	(30,181)	(36,180)	(36,902)
Cost-income	0,043	0,046	0,033	0,038
	(0,060)	(0,061)	(0,073)	(0,074)
Tier1	0,067**	0,069**	0,091***	0,094***
	(0,027)	(0,027)	(0,032)	(0,033)
Non performing loans	-0,031	-0,033*	-0,038	-0,042*
	(0,020)	(0,020)	(0,024)	(0,024)
Net interets on net margins	0,026	0,024	0,037	0,034
	(0,022)	(0,022)	(0,026)	(0,027)
HHI	3,759	3,848	3,843	3,996
	(4,340)	(4,408)	(5,269)	(5,390)
Brahces incidence	-0,793	-0,765	-1,208	-1,172
	(1,118)	(1,138)	(1,357)	(1,391)
Reference area	-3,092	-3,401*	-3,753	-4,229*
	(1,998)	(2,009)	(2,425)	(2,457)
GDP growth	1,712	0,559	-2,092	-3,881
	(6,277)	(6,309)	(7,619)	(7,714)
Unemployment	0,095	0,088	0,153	0,142
	(0,100)	(0,101)	(0,122)	(0,124)
Member-non-member differences on loans' interest rate	4,679	4,858	5,351	(5,611)
	(6,836)	(6,926)	(8,298)	(8,468)
Member-non-member differences on deposits' interest rate	-1,751***	-17,698***	-19,936**	-20,217**
	(6,525)	(6,608)	(7,920)	(8,080)
Cons	-10,714	-13,469	-16,675	-21,005
R-squared	0.44	0.43	0.45	0.43

(1) FE estimation

*Significant level at 10 per cent; **Significant at 5 per cent; *** Significant at 1 per cent.

8 Conclusion

Understanding the patterns of development of Italian CCBs is the broad theme of this dissertation. In particular, the emphasis has been on the performance of CCBs in the period from 2004 to 2009. CCBs have been framed and analyzed using an integrated approach that includes elements from the transaction costs approach, agency theory and the ownership rights approach. Within this integrated framework, CCBs have been analyzed in order to answer three main research topics.

The features of the recent growth of CCBs

It is widely recognized that the Italian CCBs have been able to restructure their business model in order to react to the liberalization of the early 90s. However, after the end of the M&A wave that involved larger Italian banking groups, CCBs were expected to slowly disappear from the Italian banking market. Instead, the CCBs kept on growing, especially in the niche market of SMEs and households. However, CCBs cannot be considered as a single, homogenous category of banks. Among this set of banks, various patterns of growth can be identified. While some of them have remained a local bank, deeply related with the area of origin, others have followed a different strategy by expanding their size and their reference area. Given their expansion, a possible consequence is the erosion of their closer integration with the local community and a weakening of their advantages in collecting soft information. The statistical evidence suggests that size does seem to play a role in differentiating CCBs. However, geography matters too. In order to further understand how these two elements impact the growth of CCBs, two different attempts have been made. The first was to test the Law of Proportioned Effects in order to detach the impact of size on growth; the second exploited the characteristics of the environment in which CCBs are located—i.e., the level of social capital—to explain their market shares.

Drawing from the model in Tschoegel (1983) to test the validity of LPE for CCBs in the period from 2004 to 2009, the goal was to understand the role of size in the growth of CCBs' loans, assets, and membership. The results favour rejecting the LPE in favour of a negative relationship between size and growth. Smaller CCBs have grown faster than the biggest ones. Moreover, the multivariate analysis has underlined the important role played by other variables, such as the cost-income and the average earnings on loans or the average costs of deposits in explaining the growth of CCBs. Among the most relevant variables, it is possible to list those describing the area in which the CCB is settled. For this reason, special attention has been paid to analyse the role of local features in order to describe the performance of CCBs.

The impact of social capital on the performance of CCBs

In order to analyze the importance of the area on the performance of CCBs, it is vital to choose

those features that capture the specificity of these banks. Given their cooperative aim, it is plausible to assume that the CCBs benefit more than other types of local banks from an environment characterized by a high level of cooperation and trust. In this case, the data have been aggregated at the provincial level and the dependent variables account for the overall market share of CCBs and the specific market share of CCBs with SMEs. However, the environment can also favor the presence of other types of small banks, who base their lending technology on relationship and proximity to their customers. For these reasons, data at the province level have been collected also for small banks that are non-CCBs.

The analysis performed on share of CCBs in the loans market indicates a strong relation with social capital, defined both as the number of people joining associations and as the level of trust. The relation is even stronger when the market share in the niche market of SMEs is considered. In the areas with low social capital, CCBs funding are lower. By separating the types of network in to universal or particular, the results show that the universal network is the one that matters in explaining the market share of CCBs.

According to these results, CCBs are more prevalent in areas with a larger network among people, especially those interested in working with associations of universal aim, and by a higher level of trust. Due to this social capital, CCBs are able to fully exploit their comparative advantage in collecting soft information, in lending on a relational basis and to control members through peer monitoring. This seems to be a unique feature that other small banks do not share.

The ownership structure matters and it makes a difference in defining how the social capital impacts the diffusion of CCBs. The ownership structure of CCBs allows them to better implement the informal mechanisms of lending and control.

The relation between the governance structure and interest rate pricing as a way to reward members

Finally, the dissertation aims to investigate the reward strategies that CCBs have implemented. In particular, members have an incentive to join a cooperative firm if they can get some private benefits from the membership, besides their altruistic interest in supplying a public good for the local community. The way in which members express their preferences is through a vote in the general assembly. According to the median voter model, the board and the manager should design the balance sheet in order to better reward the ‘type’ of members who hold the majority of votes. Members, who are either borrowers or depositors, have conflicting expectations on the reward policies, in general. In particular, their gains from the pricing of either interest rates on loans or on deposits are diametrically opposed. First, this chapter attempts to draw a preference structure for different types of members by merging the median voter framework and the Smith et al. (1981)

model, and second to empirically test the resulting preference structure.

The above theoretical framework helps to describe four types of members and to identify their preference structure in terms of reward schemes. The two most challenging types are the "pure depositors" and the "mainly borrowers". Their expectations are opposite in terms of preferred interest rate policies. The first one will vote for an increase in the interest rates on deposits, while the second would prefer a reduction of the interest rates on loans.

The empirical tests show that the borrowers have played a decisive role compared to depositors in addressing the redistributive policies of CCBs. If the majority of members are composed of borrowers, the reward strategy is the second best option for the "main borrower" type. The manager will increase the interest rates on deposits so as to please both types of members simultaneously: depositors directly and borrowers indirectly, since they also hold an account in the CCB as well. Alternatively, if the majority is composed of depositors, the pricing strategy does not follow the preference structure according to the median voter theory. Instead, it is determined by the solution of the maximization problem for the optimal interest rate on deposits. The CCB pays more attention to its cost level.

Main contributions and economic implications

The main contributions of this dissertation to the CCBs literature are the following:

1. Evidence shows that the smaller CCBs have not disappeared as expected, instead they have grown faster than larger CCBs from 2004 till 2009: size matters;
2. CCBs have shown a larger market share in areas where the social capital, in terms of network and trust, is higher, for the period from 2003 till 2011: environment matters;
3. CCBs reward their members, not always according to the strategy suggested by the median voter theory, instead by taking into account the sustainability of bank: ownership matters.

According to the results of this thesis, some policy recommendations can be derived. The search for economies of scale by increasing size is not a strategy that will speed up the growth of CCBs. Other factors seem to play a prominent role in the development of these banks. These include factors such as the construction of an external environment based on reciprocal trust and deeper network among people. CCBs would be able better exploit the mechanisms on which they base their advantage as compared to other financial institutions: localism, reciprocal knowledge and ownership structure. Moreover, given the importance of their members, who are simultaneously owners and customers of the bank, CCBs should find the best strategies to be reward for the partnership in the bank's venture and at the same time respecting the balance sheet constraints.

In order to reach these goals, CCBs cannot merely be *passive* actors in the local economy and also base its growth on the demand side. CCBs should play a more *active* role in the local

development financing projects which are aimed to increase the cooperation and the sustainable growth in the area in which they are settled. They should be able to seize the new demands emerging from the transforming social and economic setting and to provide innovative solutions. Among the most challenging aspects that have recently emerged, here is a partial list that may be relevant for CCBs: the rise of the so-called poor workers, the precarious condition given by the new labour contracts, the emergence of various family typologies, the growing request for financial services by small enterprises run by migrants. To face such financial requests, the old elements that characterised the lending contracts—for e.g, the collateral, are no longer adequate. Furthermore, raising funds through deposit accounts is not appealing for the young and it has to deal with the aggressive competition coming from online banks. CCBs need to take into account these new scenarios and reshape their business model accordingly. This is not just a "good" thing per se; it is also a focal strategy in order to pursue the goal of growth and surviving the competition from other banks.

CCBs constitute an interesting topic that needs to be further explored. One of the promising fields of research concerns the corporate governance of CCBs. In particular, it would be interesting to analyse whether the manager pursues the CCB's goal motivated by an incentive scheme or if he or she avoids free riding behaviour as a result of the monitoring tools implemented by directors. Similarly, whether the relationship between the manager and the directors can be better described by the stewardship approach may be worth exploring. Selfish managers and directors could effectively thwart the cooperative form of these banks. Another issue worth exploring is the comparison between CCBs and commercial banks of similar size. Even though the number of small commercial banks is limited, it is only by comparing CCBs with other small, local, non-cooperative banks that the role of ownership will be clarified. Finally, in order to have a more complete framework, the customers' point of view should be considered. In particular, the relationship between SMEs and CCBs during the time of financial turmoil will shed some light on the resilience that CCBs seem to show in adverse periods.

Final considerations

This dissertation argues that the CCBs are not akin to some dinosaurs that have survived cyclical economic crisis but designated to disappear however. Instead, CCBs are dynamic and resilient actors of the local development and they are able to adapt to the changes in the economic and social environment in which they are situated. Due to their growth in the past, the CCBs are now larger, their market share has risen and their customers are more diversified. However, the recent crisis has placed new challenges in terms of liquidity shortage and worsening credit quality. The increasing difficulties in raising funds are affecting their survival as well. Since their margin interest, which is

the main income source of CCBs, is lowered by the increase in the costs of the fundraising. Moreover, the concentration of the loans in specific industries—i.e., real estate and construction—makes these banks more vulnerable to idiosyncratic shocks. Finally, the expansion of loans to non-traditional customers could increase the overall risk due to a rise in the share of non-performing loans.

The evolution from RBs to CCBs has not been fully supported by a review of the governance structure, which is necessary given the new risks faced by CCBs. Among the most urgent issues to be upgraded are the following: an inappropriate distribution of competencies to the management and a lower turnover of the directors in the board that gives rise to the so-called "group thinking" problem. This results in a deepening of "hegemonic" positions, and in reduced capacity of the auditors' board to be independent and incisive. According to Visco (2012), the inadequateness of the managerial structure and of the complexity of the managerial procedures have reduced the effective capacity of CCBs to exploit their relationship lending advantage, ending up in inefficient choices in some cases.

CCBs are fully independent banks, affiliated to a second level network that provides them both with financial and non-financial services. The corporate governance structure plays a central role here. Their statutes have recently implemented new rules, which imply more severe selection criteria for board members, a smoother turnover and a stricter regulation that is aimed to prevent conflict of interests. However, the main challenges that they face in the years to come will be to improve their structure in order to be more efficient and competitive, especially on corporate governance. The resilience and adaptive features should be able to help CCBs to successfully tackle these new challenges.

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