Mutuality in the credit business of the banking enterprise: the cooperative credit survey

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Michele Modina - Domenico Curcio - Anna Vittoria Formisano

Abstract

***Frame of the research**: Inspired by the stakeholder value model more than the shareholder value model, cooperative credit banks (CCBs) are enterprises that aim to generate profits to sustain their business for the benefit of the community, rather than profit-making alone being the overriding goal guiding their actions. (Ayadi et al., 2010).*

***Purpose of the paper:** This paper seeks to investigate whether the loan pricing decisions adopted by mutual banks are consistent with their objectives in terms of mutuality. We focus on how banks take into account the actual riskiness of borrowers in their lending activities, and hypothesise that the evidence of cross-subsidisation, in terms of interest rates charged, between high- and low-quality borrowers is consistent with the nature and objectives of cooperative credit banks.*

***Methodology**: The investigation into lending behaviour focused on an examination of pricing policies and was conducted in the form of an empirical analysis concentrating on the comparison between the interest rates applied in 2020 by four Italian CCBs working in the same geographical area, and the theoretical interest rates, consistent with the risk level of the counterparties.*

***Findings**: The results show that the pricing adopted by the cooperative banks that were examined is partially decoupled from the risk level of the loan granted to the counterparty. The application of less favourable conditions to the best borrowers and more favourable conditions to the worst borrowers constitutes a credit pricing system that can be defined as mutual.*

***Research limits:** Like all such work based on an analysis of case studies, the research has limitations which are a consequence of the potential lack of representativeness of the phenomena observed. This concerns the number of intermediaries in general, and, specifically, the technical form of lending (opening a line of credit within a current account), which does not cover all types of credit line relationships, and the observation period, which is limited to the year 2020.*

***Practical implications**: The setting of rates on loans to customers is an effective lever that cooperative banks can use from a strategic point of view, in the context of mutual credit management.*

***Originality of the paper**: By using proprietary data from the banks examined, the work represents the first attempt to understand whether the credit policy of cooperative credit banks, which manifests itself most notably in the setting of lending rates, is consistent with their cooperative nature and with the values of solidarity on which their actions have historically been based.*

Key words: business model for sustainability; mutuality; stakeholder value; cooperative credit banks; credit pricing

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1. Introduction

Crises over the past decades, as well as the ongoing focus on sustainability issues, highlight the need to innovate corporate business models so as to increase the resilience of companies and their ability to survive in the new competitive environment (Ferlito and Faraci, 2022). Sustainable innovation is a fundamental lever for change that affects all businesses and industries, and it involves designing business models which are suited to the changing needs of stakeholders, customers, and the environment inside and outside the company (Freeman, 2010). Accordingly, innovators focus on exploring opportunities to design a new business model that creates value for all stakeholders, respects the environment, and leads to long-term sustainability. This involves the creative integration of business and sustainability concepts to create a model that is economically viable, socially responsible, and environmentally friendly (Bocken and Short, 2016). This innovation process includes assessing current models, understanding customer needs and preferences, identifying opportunities for improvement, creating products and services consistent with social and environmental challenges, and evaluating the results (Osterwalder *et al.* 2005). Following a variety of approaches (circular economy, open innovation, collaborative consumption), the adoption of innovative and sustainable business models helps organisations reduce their environmental impact, remain competitive in the market, attract and retain customers and employees, and create long-term value (Schaltegger *et al.*, 2016; Foss and Saebi, 2017; Zott *et al.*, 2011).

Banks are among the companies that are most committed to supporting sustainability. For Yip and Bocken (2018), they play a crucial role in sustainable development because they assess risks and put a price on the ones taken in the credit approval process. Regardless of their ownership and capital structure, banks must perform well to maintain business integrity and stability. However, for a particular category of banks, namely cooperative credit banks, profit maximisation is not the main objective, as their primary purpose is to foster the economic, social, and cultural development of their members, customers, and the community in which they operate (Minto, 2016). Cooperative credit is inspired by the banking model known as Stakeholder Value Bank (STV), which differs from the so-called Shareholder Value Bank (SHV), in which management acts primarily in the interest of shareholders by maximising return on equity. By adhering to the STV approach, cooperative banks aim to generate profits to co-create value by balancing the different interests of the various stakeholder categories (members/customers/reference communities) and adopting a long-term perspective (Casadesus-Masanell and Ricart, 2011; Chesbrough *et al.*, 2011; Gambardella, 2014; Casprini, 2015). They do not, therefore, consider profit as the overriding goal driving their actions (Ayadi *et al.*, 2010), rather it is a means to safeguard business continuity, growth, and the achievement of the social objectives that underpin their corporate mission. This is because cooperative banks aim to satisfy the needs of their members rather than pursuing maximum profitability. Their democratic structure assigns equal voting power to all members, regardless of their

invested capital (Bergoeing and Piguillem, 2022). These are banks that adopt traditional rationale aimed at creating value for stakeholders (Coco and Ferri, 2010).

This category of banks contrasts with traditional banks, whose main objective is to create value for shareholders, and which typically include commercial banks and investment banks. While a commercial bank provides relatively standardised money management services (e.g. deposit, payment, financing, investment in financial markets, etc.) through a mechanism known as 'credit creation' (Anand and Mantrala 2019), to a clientele which tends to be heterogeneous in nature and size (e.g. to individuals, for-profit and not-for-profit companies, public entities, etc.), the activities of an investment bank focus mainly on investments, management of financial instruments and, more generally, on complex financial transactions involving large corporations.

The characteristics of cooperative banks (CCBs) can be found in their credit supply, which is the core of their activity. Their small size and territorial approach favour the adoption of strategic choices based on relationship and information advantage (Baccarani *et al.*, 2013; Caridà *et al.*, 2015; Buffa *et al.*, 2019), but at the same time, they make cooperative credit more exposed to the 'risk of capture' by elements found in the local context (Becchetti *et al.*, 2016), as well as being more sensitive both to regulation, when the regulatory framework does not adequately apply the principle of proportionality (Schenkel, 2017; McKillop *et al.*, 2020), and to technological innovation, which requires substantial investments that are difficult for banks to sustain on an individual basis (Arner *et al.*, 2017; Ferri, 2017; D'Onza *et al.*, 2021).

In this scenario, competition, regulation, and technological development have favoured the evolution of a banking business model. This then led to the implementation of a process of business model innovation, which, while considered the new driver of competitive advantage (Casprini, 2015), cannot overlook the fact that the challenge for traditional cooperative bank lending is to generate sufficient profits to ensure adequate levels of profitability, while respecting sound and prudent management and mutualistic principles. The application of price leverage on loans must consider the elements of credit risk appropriately, therefore, without compromising the fiduciary relationship with customers and the reference community.

In line with the considerations outlined above, this research employs case study methodology to investigate the lending policies of four cooperative banks, in order to verify whether and to what extent there is consistency with the aims of cooperative credit. Loan pricing is one of the ways in which mutual banks distribute the value they create to their members and, more generally, to the territory in which they operate. By comparing actual (applied) pricing and theoretical pricing (so-called risk-adjusted pricing), this study aims to verify whether the mutuality of CCBs finds expression not only in their charitable interventions in favour of volunteering and associations but also in the granting of loans to customers.

The study's originality can be found in its investigation of the pricing of loans, adopting an innovative approach, differing from the studies to date

that have focused on the factors that guide banks' choices in setting interest rates. The emphasis is not on an analysis of the pricing determinants in search of a model that best serves the interests of the various stakeholders, instead, this study aims to verify whether the setting of lending rates constitutes a lever that cooperative banks use to achieve a mutual type of credit management.

The results seem to confirm that the principle of mutuality can inspire the provision of credit by CCBs. Compared to the theoretical rate they would have to apply if they priced the credit risk correctly, they apply slightly higher rates to more deserving customers while charging lower rates to less virtuous customers. In this way, mutuality in lending translates into charging the good borrower more (compared to the theoretical or ideal rate) and charging the less virtuous borrower a lower rate (compared to the ideal rate). In this regard, the average loan rate is the result of the calibrated pricing applied to customers with different risk profiles. The conscious pursuit of mutuality in the granting of loans defines the bank's competitive positioning and how it undertakes its commercial development actions, following the principles of cooperative credit.

This work provides valuable guidance to academics, managers, and policymakers on the sustainability of adopting such practices in the granting and pricing of credit. It is structured as follows: section two contains a review of the literature on the unique characteristics of cooperative credit banks and the relationship between lending, pricing, and the sustainability of the cooperative credit business model; section three presents a description of the methodology used in the empirical investigation of the banks surveyed; the analysis of the results in section four is preparatory to discussion of the findings (section five), and the concluding remarks contained in section six.

2. Literature review

According to Ayadi (2019), the business model of financial intermediaries can be understood to be how they manage their assets and liabilities in order to contribute to the functioning of the economic and financial system, primarily through the management and/or transfer of risk.

The central elements are asset and liability management on the one hand, and risk management on the other. Concerning the first point, the business model of mutual intermediaries differs from that of banks, which focus more on making money. This is due to the difference in the weight of credit intermediation, and the nature of the parties involved in funding and lending relationships.

Following the Business Model Canvas proposed by Osterwalder and Pigneur (2010), the value proposition aims precisely at meeting the needs of a specific customer segment. Similarly, in the context of a CCB, the value proposition is linked to the direct support given to the local economy through the provision of a wide range of banking products and services that are designed to be particularly beneficial to the local community. Just as in

the Osterwalder model, customers are at the centre of the CCB business model; consequently, the target audience includes not only customers with a low risk profile, but also those with a higher risk profile.

Where risk management profiles are concerned, determining the interest rate applied to loans granted to customers represents a fundamental tool for managing credit risk and transmitting the bank's commercial policy. In the framework of risk assessment and pricing in the lending process, banks participate by promoting, or not promoting, sustainability (Jeucken, 2010).

Relative literature has conducted extensive investigations into the financial support that cooperative banks provide to firms and households in the local areas where they operate. From a theoretical point of view, the objectives and characteristics of cooperative banks imply both advantages and disadvantages in terms of providing credit to the economy. On the one hand, their small size and territorial approach should favour lending relationships through a more effective reduction of information asymmetries (Petersen and Rajan, 1994; Berger and Udell, 1995; Berger *et al.*, 2004; Elsas, 2005; Bonfanti, 2009; Maizza *et al.*, 2012; Kysucky and Norden, 2016; Beck *et al.*, 2017); on the other hand, small banks which concentrate their operations at local community level may suffer from inefficiencies linked precisely to their small size, and be more exposed to the 'risk of capture' by the local political and business environment (the dark side of relationship credit according to Becchetti *et al.*, 2016).

The information advantage enjoyed by cooperative banks and their close relationship with the territory translate into an improved ability to select and monitor so-called "opaque" borrowers, including SMEs (De Bruyn and Ferri, 2005). By studying the consequences of the presence of cooperative banks on long-term local growth, Usai and Vannini (2005) found that intermediaries of this kind are better suited to provide funds to local firms. Moreover, their superior ability to collect and manage soft information compared to other types of banks has led to a lower impact on the availability of credit provided by cooperative banks during periods of financial crisis (Ferri *et al.*, 2014; 2017). Minetti *et al.* (2021) examined the role of these intermediaries in reducing income inequality, emphasising the mutualistic nature of their activities in fostering the socio-economic development of the territory.

Studies on loan pricing are less numerous. In general, the way banks set loan rates is embedded in a theoretical framework that dates back to the work of Ho and Saunders (1981), later extended by Angbazo (1997) and Gambacorta (2004), and, more recently, by Camba-Mendez *et al.* (2016) and Camba-Mendez and Mongelli (2021). According to this approach, the profit margin on funding and lending activities depends on the degree of risk aversion, the market structure in which the bank operates, the average size of transactions, the volatility of money market rates, and the risk of insolvency of the borrower, which is the focus of the empirical investigation in the next section.

In general, when deciding on the conditions applied to lending and funding, a bank must mediate between two opposing interests: that of the providers of funds (creditors of the bank), who expect the highest possible return from the resources they invest, and that of the borrowers of funds

(debtors of the bank), who instead express a preference for minimising the cost of the funding received. In the case of mutual banks, the creditors and debtors of the credit union are predominantly, though not exclusively, members of the institution, and this is relevant from the point of view of credit pricing, which is of interest herein.

Several studies on American credit unions, which have collection and lending relationships exclusively with their members, have empirically verified the orientation of these institutions in favour of their creditors and debtors, finding that they are prevalently neutral, which represents a choice that is consistent with the objective of attracting new members of both types (Flannery, 1974; Smith, 1986).

In contrast to American credit unions, cooperative banks also have non-member customers, which introduces further complexity in the attempt to balance the interests of different stakeholders. Emmons and Schmid (2002) find that the pricing policy of cooperative banks is determined not only by the preferences of customers who are members, but also by the volume of business involving non-member customers. The cooperative's incentive to lend on better terms to counterparties increases as the volume of business with member customers increases. Catturani and Venkatachalam (2014) generalise the model of Smith *et al.* (1981), which described credit union pricing policies to account for the non-member counterparties' role in cooperative banks. The authors show that, when setting interest rates, cooperative banks should include a premium that takes into account the interest rate sensitivity of each of the types of counterparties, which stems from the combination of attributes related to participation (member/non-member) and the type of financial position vis-à-vis the bank (debtor/creditor).

3. Empirical analysis

3.1 Research aim

With regard to the limited number of previous studies which refer specifically to CCBs' pricing practices, this research aims to investigate whether the loan pricing decisions made by these banks are consistent with their objectives in terms of mutuality. We focus on the way banks account for the actual riskiness of their borrowers in their lending policy, and hypothesise that evidence of a cross-subsidisation, in terms of the interest rates charged, between high-quality and low-quality borrowers would be in line with the nature and aims of these mutual banks.

From this perspective, first we acknowledge that CCBs are perfectly able to assess this riskiness appropriately, given, on the one hand, the reduced information asymmetries and the typically long-lasting lending relationships highlighted within the literature discussed in the previous section, and, on the other hand, the widespread adoption of reliable, advanced models to measure bank credit risk exposure. Next, we hypothesise that their mutual nature might, to some extent, justify a certain disparity between the interest rate actually charged to their borrowers and

the interest rate that risk management models and practices would suggest, which we define as a risk-adjusted (or ideal) interest rate.

Overall, we expect pricing decisions made by CCBs to be consistent with the required, inverse correlation between borrowers' creditworthiness and the corresponding interest rate applied. Nevertheless, we argue that CCBs might charge interest rates that are not precisely the same as the risk-adjusted ones. In particular, they might set a lower price for their credit - with respect to the risk-adjusted one - for riskier borrowers, and a higher interest rate - again with respect to the risk-adjusted one - for less risky borrowers. This would result in cross-subsidisation which, although it may not be economically rational, would be justified in the light of their STV approach.

3.2 Methodology

From a methodological point of view, this investigation into the pricing policy implemented by cooperative banks is conducted by means of a comparison between the rate applied in the lending business (so-called "effective" rate or pricing) and a benchmark represented by the interest rate adjusted for counterparty risk (so-called "theoretical/risk-adjusted" rate or pricing). Bank loans are priced through a risk-based approach, resulting in an interest rate taking into account both a "technical part" and a "commercial part" (Hasan and Zazzara, 2006; Curcio and Gianfrancesco, 2011). The former accounts for the remuneration of both expected loss and unexpected loss that a bank faces in granting a loan; this includes two major elements that can be obtained using an internal rating model, namely the probability of default by the counterparty, and the associated loss rate the bank would experience, both estimated over a 12-month period. It also accounts for easy-to-find data, such as the costs of debt and equity for the bank. The commercial component consists of operational costs, commissions, and other subjectively allocated costs, which we choose not to consider since their allocation does not have any importance as far as credit risk management is concerned.

In formal terms, the risk-adjusted interest rate (P) applied to a €1 loan is estimated by applying a pricing formula derived from the following equation:

$$€1\times(1+P)\times[(1-PD)+PD\times(1-LGD)]=(€1-PATR)\times(1+TIT)+PATR\times(1+r_e)$$

where the result of a €1 risky investment, characterised by a counterparty's established default probability over a 1-year time period (PD) and the corresponding loss rate for the bank (LGD), on the left-hand side, is equal to the result of the investment of a sum given by the difference between €1 and the amount of equity that the bank must set aside against this €1 loan (PATR) at the bank's cost of debt (TIT) plus the result of the investment of PATR at the bank's cost of equity (re), on the right-hand side.

The formula assumes a 1-year time period and intentionally disregards the cost and commission components of the commercial part of the loan pricing and allows P to be calculated as follows:

$$P = \frac{TIT + (PD * LGD) + PATR * (r_e - TIT) + CO}{(1\text{-}PD * LGD}$$

where:
- P is the risk-adjusted (theoretical) interest rate applied to the loan;
- TIT is a proxy for the bank's cost of debt;
- PD (probability of default) measures the probability of default of the counterparty;
- LGD (loss given default) is the loss rate in the event of the counterparty's default;
- PATR is the amount of equity that the bank must set aside against the loan granted (as a percentage of the value of the loan itself) under prudential management;
- r_e measures the bank's return on equity, and is a proxy for the cost of equity set aside against the loan (PATR);
- CO indicates the operational costs and commissions to issue the loan, which are disregarded since they have no relevance in the perspective of credit risk measurement and management.

The product of PD x LGD represents the expected loss rate, which the bank covers through provisions for the deterioration of the quality of its loan portfolio. Compared to other risk-adjusted pricing models, the above formula does not include the EAD (exposure at default), which measures the value of the bank's exposure in the event of counterparty default and is assumed to be equal to 100 percent of the amount lent. Unlike the risk-neutral approach, the risk-adjusted approach adopted in the calculation of theoretical pricing introduces the more realistic assumption of risk aversion by the intermediary, incorporating not only the expected loss but also the associated cost of economic capital. It is assumed that a loan of 1 euro is ideally financed by TIT for a share equal to (1 - PATR) (e.g., for 90 cents) and equity (PATR) for 10 cents. In this way, the lending rate charged on loans also covers the cost of the capital that the bank sets aside under prudential supervisory regulations.

If adequately applied, risk-adjusted pricing should be able to avoid the value-destroying phenomena that result from setting lending rates that are poorly correlated to the risk of the loan. Risk-adjusted pricing should, therefore, reduce the probability of establishing uncompetitive rates for better-quality customers or lower-than-appropriate rates for customers with lower creditworthiness. Poorly risk-adjusted rates may give rise to cross-subsidisation, whereby some customer segments subsidise other customers by paying higher rates than those consistent with their actual risk and are charged lower interest rates than those consistent with their risk level. For a cooperative credit bank, cross-subsidisation, if desired and supervised, represents the application of mutuality in lending.

3.3 Sample description

The empirical analysis considers the activities of four Italian cooperative credit banks with operations in the Northeast of the country, which were selected on the basis of their location in order to ensure the greatest possible homogeneity of their loan portfolios. Specifically, a judgmental approach was used to choose the banks, because they belong to the same cooperative group and present asset and financial data, including the granularity of the data on the loans granted, which allow us to conduct a better investigation into how consistent their credit policy is with the mission of the cooperative credit banks. The data used to feed the pricing model are taken from the banks' proprietary databases and integrated with market information to estimate the cost of equity through the capital asset pricing model (Sharpe, 1964). In order to determine the effective lending rate, the average of the rates charged by banks at the end of 2020 on current account loans was used (Table 1). The effective rates refer to the different rating classes (on a scale of 1 to 13) as provided by the management system. Corresponding theoretical interest rates were calculated for these 13 rating classes using the risk-adjusted pricing model described in the previous section.

Although the loans issued by the banks we examined predominantly take the form of mortgages, current account financing has the advantage of reducing, if not eliminating, the impact on the pricing of variables other than the counterparty's probability of default, namely the duration of the loan and the value of the asset pledged as collateral.

Tab. 1: Lending activity of the banks in the sample
(Balance sheet data and interest rates as of 31 December 2020)

	1		2		3		4		Media	
	volumes	rate	volumes	rate	volumes	rate	volumes	rates	volumes	rate
Current account financing *	9,29%	3,31%	7,61%	3,33%	13,02%	2,79%	7,38%	3,59%	9,32%	3,26%
Mortgages *	74,92%	2,03%	65,67%	2,22%	67,53%	2,21%	66,20%	2,13%	68,58%	2,15%
Receivables from customers **	49,93%	2,19%	51,83%	2,30%	47,99%	2,35%	65,16%	2,28%	53,73%	2,28%
Securities portfolio **	43,99%	1,31%	44,41%	0,84%	41,36%	1,38%	28,37%	1,00%	39,53%	1,13%
Loans to banks **	6,08% -	0,22%	3,75%	-0,09%	10,65%	-0,22%	6,46%	0,04%	6,74%	-0,12%

* as a percentage of total loans to customers; ** as a percentage of total interest-bearing assets

Notes: elaborations by the authors

4. Results

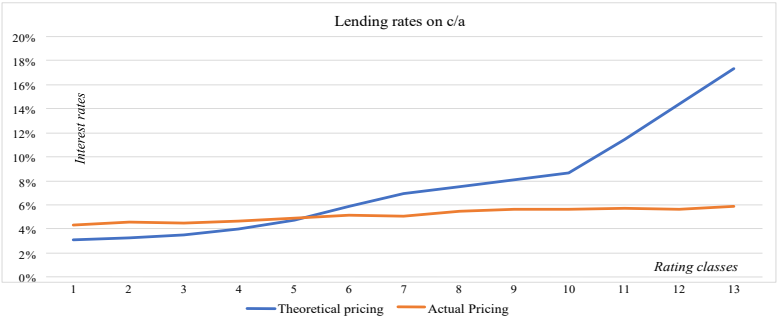
The results of the comparison between the theoretical and actual rates are presented in Figure 1, in which the y-axis shows both the effective (orange curve) and theoretical (blue curve) rates applied to a loan, and the x-axis shows the rating classes assigned to borrowers by the credit model of the banks in the sample. The counterparty risk level increases from left to right and is, therefore, lowest for class 1 (the best rating) and highest for class 13 (the worst rating). Figure 1 confirms a direct relationship between counterparty riskiness and the corresponding interest rate. In

particular, both curves show the expected upward trend from left to right: as the borrower's rating class worsens, the respective interest rate, both theoretical and actual, increases.

The two curves, however, have a different slope and consequently intersect at a point in Cartesian space between rating classes 6 and 7. Overall, the effective rate curve is less steeply sloped than the risk-adjusted rate curve. In particular, for rating classes 1 to 6, the theoretical rate is lower than the effective rate, while the opposite is observed for the following rating classes, between 7 and 13, where the creditworthiness rating gets progressively worse.

On analysing the rate curves to the left and right of the point of intersection, it is possible to observe that the misalignment between theoretical and actual pricing is also asymmetrical in terms of its size: in absolute value, the distance between the two rates is, on average, distinctly higher for the rating classes to the right of the point of intersection. Therefore, the cooperative credit banks examined charge the best (worst) borrowers with an effective interest rate that is higher (lower) than the theoretical rate. The absolute value of the differential between the rates progressively decreases moving from class 1 to class 5. Meanwhile, it increases from class 6 to class 13 with an intensity that, on the right-hand side of the graph, is affected by the significant increase in the slope of the theoretical rate curve (consistent with what is typically observed from the application of risk-adjusted pricing models).

Fig. 1: Theoretical (or risk-adjusted) lending rates and effective lending rates



Notes: elaborations by the authors

The results show that the rates applied by banks are higher for more deserving customers and lower for less virtuous customers, compared to the corresponding theoretical rates, effectively giving rise to the phenomenon of cross-subsidisation that a risk-adjusted pricing model would aim to avoid. When viewed from the perspective of a cooperative bank, however, the choices outlined may have a different basis. In line with the values of mutualism and financial inclusion, the bank in question intends to favour applicants requesting access to credit who have a relatively low merit ranking, by applying less penalising conditions than those that would be implemented should the counterparty's actual riskiness be considered in determining pricing. Meanwhile, the bank applies slightly less favourable

conditions to customers in the best rating classes, seeking to limit the price differential so as not to penalise the commercial relationship excessively.

The application of the actual rates to customer loans that are not aligned with theoretical rates results in four possible pricing options. Table 2, which considers two groups of borrowers (best vs. worst) and two types of rates (actual vs. theoretical), describes the objectives and impacts of applying each of the four pricing strategies: (1) actual rates (higher than theoretical) for the best borrowers and theoretical rates (higher than actual) for the worst borrowers; (2) actual rates (lower than theoretical) for the worst borrowers and theoretical rates (lower than actual) for the best borrowers; (3) actual rates equal to theoretical rates for all borrowers; and (4) actual rates different from theoretical rates for all borrowers. Each of these pursues specific objectives and impacts the volume and quality of lending differently. For example, in applying the first strategy, the bank maximises the risk-return ratio by charging the best borrowers a little more and pricing the worst borrowers correctly according to their risk. However, the reduction in lending volume is due to the possible departure of the best customers who are not satisfied with the conditions applied.

The CCBs surveyed do not apply optimal pricing policies when lending to customers, failing to differentiate their terms properly based on risk. Instead, their pricing policy places them in the situation represented in the last row of the table: the systematic application of actual rates that differ from the theoretical ones. This choice is not without potentially hazardous consequences for the stability of intermediaries. The poor differentiation of rates according to risk and, in particular, the misalignment described above, could favour an overall deterioration in the quality of the loan portfolio as it generates 'adverse' incentives in customers: on the one hand, it stimulates riskier borrowers to turn to the banks in question, rather than to intermediaries who, pricing their credit according to a risk-adjusted criterion, would ask them for higher rates; on the other hand, it encourages less risky borrowers to turn to other banks in order to obtain lower risk-adjusted rates than those proposed by the CCBs in the sample.

Tab. 2: Pricing policies and objectives of the bank

Pricing policies	Objectives	Impacts
1. Effective rates for the best debtors and theoretical rates for the worst debtors	Maximising the bank's money management contribution	It may improve the interest margin; however, it may lead to a reduction in the volume of loans due to the possible exit of better customers (not satisfied with the conditions applied), resulting in a worsening of the overall quality of loans
2. Effective rates for the worst debtors and theoretical rates for the best debtors	Developing the volume of jobs	It can make commercial policy more effective due to the favourable terms offered to counterparties. Conversely, the risk of adverse selection, with its consequent impact on the overall quality of the loan portfolio, must be monitored.
3. Effective rates = rates theoretical for all debtors	Apply the theoretical risk-adjusted rate for each risk class	The mix of impacts of policies (1) and (2) but a complete absence of mutuality
4. Effective rates ≠ rates theoretical for all debtors	Systematically applying effective rates	Full applicability of mutuality; however, potential negative impacts (cross-subsidisation) primarily if competitors use risk-adjusted pricing models

Notes: elaborations by the authors

There are two responses to the criticism of adopting sub-optimal pricing policies.

The first is that adopting pricing policies that favour mutuality does not exclude, rather it reinforces, the importance of using robust creditworthiness assessment techniques. In other words, the mismatch between actual and theoretical rates is not accidental but is a strategic choice of the bank that decides to apply different rates even though it is aware of the indications deriving from risk-adjusted pricing models. With this in mind, the bank can change its strategy if market conditions, or its strategic objectives, should change.

The second is that the bank can mitigate the undesirable effects of suboptimal pricing policies by appropriately adjusting its credit risk provisioning policy. The adoption of the fourth strategic option should preferably be accompanied by higher provisions, which are easier for a cooperative credit bank to apply (all things being equal) than for a commercial bank that does not have profit maximisation as its primary objective, and on which higher loss provisions have a negative impact.

5. Discussion of result and implications

Determining lending rates on loans is one of the main applications of credit risk measurement models, mainly regarding the modelling developed to estimate the probability of default (PD) and the loss-given default (LGD) rate. Considering the above, the results of the empirical analysis show that cooperative banks apply pricing that is partially decoupled from the risk content of the loan provided to the counterparty. The application of less favourable conditions than those that would theoretically be calculated to the best borrowers and more favourable conditions to the worst borrowers establishes a credit pricing system that could be defined as mutualistic and adjusted to promote sustainability in the area of operations and within the reference community.

If it were a shareholder value (SHV) bank, this practice would not be rational and would be difficult to defend, as it is destructive with regard to shareholder value. A CCB, however, is not an SHV, and what is summarised in the graph can be defined as the result of a mutualistic approach to the granting of credit, which acquires its rationale precisely in the cooperative nature of cooperative credit banks. While respecting its identity as a community bank, a CCB is still a financial intermediary that must be robust in order to play its role in the territory and pursue its social objectives. With this in mind, it seems fitting to ask whether adopting pricing that is (partially) uncoupled from the indications resulting from a risk-adjusted approach is sustainable. No, if examined in isolation; yes, if, in light of the bank's overall management dynamics, it does not threaten the bank's stability.

Loan pricing, although important, is only one aspect of the overall management of credit and the risk associated with it. Mutuality in loan pricing becomes sustainable from a business point of view as long as the bank finds a way to compensate for the adverse effects of applying rates

that are not perfectly aligned with the risk of the counterparty: on the one hand, lower competitiveness concerning better customers; on the other hand, the underestimation of risk for worse customers. Lending to good-quality borrowers on less favourable terms than they would get if the bank priced the risk correctly is not a problem for the bank's management as long as the bank manages to keep the adverse selection mechanism described above under control and this does not lead to the loss of customers. In this regard, it is reasonable to assume that the customers of a cooperative bank, regardless of their membership, share its mutualistic ideals, appreciate its role in promoting the economic and social vitality of the territory, and that they believe that the value of these aspects can compensate for the sacrifice of an interest rate that is worse than what is due.

Where stability is concerned, underestimating risk is undoubtedly more significant. In this regard, the levers to be activated can only be found in a provisioning and capitalisation policy that allows for the recovery of the arbitrary margin the bank uses in setting a lower effective rate than the risk-adjusted one. The nature of not-for-profit banks, for which the profit motive is excluded by limits on profit distribution and the principle of indivisibility of reserves, the low appetite for speculative risk-taking and the low volatility of performance, provide a solid basis for creating robust capital buffers.

The abovementioned considerations refer to a static view of the comparison between risk-adjusted and actual pricing. However, the (partial) misalignment of the effective rate with the risk-adjusted rate also has interesting implications from a dynamic perspective. Compared to the use fully aligned to risk-adjusted pricing, adopting a somewhat risk-free mechanism may be consistent with a less procyclical, or even countercyclical, attitude of the practising intermediary[1]. Following the business cycle, the risk-adjusted rate tends to be higher during economic downturns, when default probabilities increase, and lower when the economy grows, and default probabilities decrease. If pricing is (partially) decoupled from risk, it automatically becomes less stringent (than it should be) during slowdowns or recessions and more stringent (than it should be) during phases of growth.

Even in this dynamic perspective, the sustainability of the mutualistic approach to pricing necessarily passes through the actions of capital strengthening and adequate provisioning as mentioned above.

[1] In general, the term "procyclicality" describes the tendency to amplify fluctuations in the business cycle. With reference to the calculation of the capital requirements of banks, procyclicality is the phenomenon whereby, as a result of a general increase in counterparty riskiness during economic downturns, there is, all else being equal, an increase in capital requirements and, conversely, as a result of a lower perception of risk during upturns, a reduction in capital requirements. Capital requirements therefore adjust to take into account changes in counterparty default probabilities during different phases of the economic cycle.

6. Concluding remarks

Banks play a primary role in the pursuit of sustainable development within economic and financial systems. Due to their positioning as financial intermediaries in trade management, their activities involve not only the parties in the transaction but also multiple stakeholders. In assessing risks and allocating loan rates, banks promote sustainability by appropriately allocating financial resources to foster the economy's stability and prosperity over time (Jeucken and Bouma, 2017).

This study aims to test the application of the mutualistic approach and the sustainability orientation of cooperative credit banks in carrying out traditional lending activities. By analysing the lending policies of a sample of CCBs and, in particular, comparing the pricing applied to customers and that which should have been applied using a so-called risk-adjusted approach, the results of this work highlight that the banks in question do actually seem to adopt the principles of mutuality in the granting of loans, not limiting them to liberal contributions to the voluntary activities of the reference community. In our opinion, this study is innovative because it represents the first attempt to understand whether the credit policy of cooperative credit banks, one of its highest expressions of which is the setting of lending rates, is consistent with their cooperative nature and with the values on which their operations are based.

From a theoretical point of view, the study's main contribution consists in not limiting itself to investigating the factors underlying the definition of interest rates but in offering insights into the actual application of the principle of mutuality in granting loans to customers. Since lending constitutes the central core of intermediation carried out by commercial banks, the analysis of credit pricing confirms that the business model of CCBs is stakeholder value (STV) and not shareholder value (SHV).

Compared to the rate that would be established if CCBs priced credit risk according to the riskiness of the counterparty, they charge slightly higher rates on short-term loans to the most deserving customers while charging lower rates to customers in higher risk classes. In this way, mutuality in lending translates into charging a little more to the good borrower (compared to the theoretical or ideal rate) and a little less (again, compared to the ideal rate) to customers with less favourable risk profiles. This can be applied to the banks in question thanks to their comparative advantage of being STVs and, therefore, not as profit-maximising as SHVs. The option of not putting profit maximisation at the centre of their business model (Groenveld, 2015) allows cooperative credit banks to maintain solid capital and financial ratios, and to work on improving performance indicators while respecting the specific nature of being a cooperative bank with a mutual and social vocation.

From a managerial point of view, the conscious pursuit of mutuality in granting loans defines the bank's competitive positioning and how it undertakes commercial development actions in compliance with the principles of cooperative credit. Over the past decade, cooperative credit banks have seized the opportunity to build adequate capital reserves and improve asset quality and liquidity in compliance with regulatory

requirements. However, the path to prepare for the upcoming competitive challenges has not come to an end, it is moving towards an adaptation of the business model to generate sustainable positive returns. A virtuous cooperative credit bank could put into practise a kind of 'managerial resilience' in a transitional scenario, such as the current one. While waiting for economic recovery, the bank's objective could be to generate sufficient profits to avoid compromising profitability and capital endowment. A sort of 'minimum wage' that the CCB must achieve in order to earn a fair profit that can repay the risks it takes, without reducing capital coverage, and continue to support social and cultural initiatives in the area of operations. In other words, resilience would allow it to continue to be a community bank without activating the price lever, which could compromise the fiduciary relationship with customers and impoverish the territory.

In terms of policy implications, studying cooperative banks' loan pricing decisions makes it possible to achieve a greater understanding of the role of these banks within the economy, in the light of their mutual nature. In this perspective, we contribute to the debate about the importance of the lending activities of CCBs as a feasible contribution to a more inclusive financial system. It is, of course, important to mitigate the shortfalls in the business model of cooperative banks, especially those regarding their governance. This has led the Italian Government to reform Italian CCBs and "Banche Popolari", aiming to address the structural weaknesses of these banks with regard to their efficiency and organisational framework. Nevertheless, it is fair to say that these legislative interventions will only be considered successful if they can also safeguard the specific nature of mutual banks and strengthen their role as stakeholder value institutions, for example, by letting them handle the customer cross-subsidisation that this research has emphasised as far as the definition of loan interest rates is concerned.

The limitations of the study, which stem essentially from the case study approach that was adopted and which are substantiated by the potentially low representativeness of the phenomena observed, create opportunities for future research. Acknowledging the limits of the sample, therefore, and its compatibly with the availability of proprietary information on the rates applied, future work could try to broaden the study so as to understand whether other banks representing the cooperative credit system (in other geographical areas, and with different income and asset profiles), also pursue the principles of mutuality in their credit intermediation activities by intervening on the rates charged. Another limitation concerns focusing on only one technical format, i.e., current accounts. Although this choice is guided by the rationale that it is easier to understand the effects of a one-period pricing formula, future research could consider other technical formats to verify the extension of the mutualistic approach to the entire credit chain, rather than just considering part of it. Lastly, a third limitation concerns the quantitative methodology adopted, which could be affected by the temporal and spatial content taken as a reference for the study. This could be mitigated by enlarging the time series, especially if this means including cycles and phases characterised by different economic (expansion/recession) and monetary (rising/falling rates) conditions.

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Academic positions and contacts

Michele Modina
Full Professor of Management
University of Molise - Italy
e-mail: michele.modina@unimol.it

Domenico Curcio
Full Professor of Banking
University of Naples "Federico II" - Italy
e-mail: domenico.curcio@unina.it

Anna Vittoria Formisano
PhD Student
University of Molise - Italy
e-mail: a.formisano4@studenti.unimol.it

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