Finance Research Letters 84 (2025) 107842

Contents lists available at ScienceDirect

Finance Research Letters

journal homepage: www.elsevier.com/locate/frl

Economic proximity and cooperative banks strategies

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ARTICLE INFO

Keywords:
Cooperative banks
Economic proximity
Distance measures
Connection analysis
Panel regression

ABSTRACT

Economic proximity measures the Italian Cooperative Banks' (CBs) new heavier attention to finance firms operating in industries considered as interesting targets, not only because of their territorial closeness, but for tighter strategical and business reasons as an organisational response to the institutional complexity deriving from the creation of Cooperative Banking Groups. All the Italian CBs data in 2010-2022 are considered. The results show the economic proximity ability to capture the similarity between the CBs' and the Italian banking system's behaviour and indicate a change in CBs credit allocation policies driven by credit risk, bank size, profitability, and group affiliation.

JEL code. G20; G21; C1; C2.

1. Introduction

Although the credit allocation criteria are well known and agreed, in practice, differences exist and the mechanism varies for commercial or Cooperative Banks (CBs); these differences derive mainly from purpose, organisational structure, governance, and management criteria (Pacelli et al., 2020). Specifically, as is widely known, commercial banks primarily pursue profit generation, and therefore, the allocation of credit is driven by maximising returns for shareholders (*profit logic*). Differently, CBs must pursue a mutualistic purpose and thus produce benefits for their members and the local community (*cooperative logic*). Consequently, the cooperative logic is focused on both geographical and relational criteria; such a peculiarity does not affect other banks since they are free to provide credit to whoever they wish, in any industry, without geographical constraints.

Referring specifically to the Italian banking system, the reform of CBs introduced in 2016, establishing Cooperative Banking Groups, aimed to enhance the governance, stability, and risk management practices of CBs, encouraging them to balance mutualistic objectives with improved efficiency and competitiveness (Ministry of Economy and Finance, 2016a and 2016b). This reform raised strategic questions about whether and how the cooperative logic has evolved or adapted to these organisational dynamics (Barbagallo, 2016; Beccalli et al., 2023).

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https://doi.org/10.1016/j.frl.2025.107842
Received 30 December 2024; Received in revised form 11 June 2025; Accepted 23 June 2025
Available online 24 June 2025

From the above, a question emerges: how can we assess the ability of CBs to remain faithful to their territorial mission while simultaneously complying with the new heavier profit-driven logics?

To address this, we introduce the concept of *economic proximity*, defined as the measure of the trade-off between adherence to cooperative logic and the new heavier attention to profit-driven logics. Economic proximity captures how CBs balance their traditional mutualistic mission with the need for strategic alignment with broader market practices, reflecting the organisational response to institutional complexity, where multiple, often conflicting institutional logics coexist (Greenwood *et al.*, 2010, 2011). Specifically, the paper aims to examine the evolution of Italian CBs' credit supply across industries to assess whether, to what extent, and how strategies have been increasingly driven by economic opportunities as joint factors with geographic proximity, particularly following the 2016 reform.

Through empirical analysis covering the period 2010–2022, this study explores whether Italian CBs adjusted their sectoral credit allocation strategies to align more closely with the broader Italian banking system's profit-oriented practices after the introduction of the 2016 reform, which changes governance practices. The findings indicate evidence of a regime change post-reform, highlighting alterations in the balance between cooperative and profit-oriented strategies.

To our knowledge, no existing works in the literature have approached this topic from our perspective; therefore, we offer this exploratory study to shed light on CBs' strategic choices. The paper includes a Literature Review (Section 2), Methodology (Section 3), Data and Results (Section 4), and Conclusions with future research directions (Section 5).

2. Literature review

Different conceptual frameworks for proximities have been studied in finance. The most investigated phenomenon is geographic proximity (Williams & Gardener, 2003; Guiso *et al.*, 2004; Catturani & Borzaga, 2014; Sellar, 2015; Agostino & Trivieri, 2018; Bernini & Brighi, 2018; Coccorese & Shaffer, 2021; Bragoli *et al.*, 2022; Filomeni *et al.*, 2023), analysing the relationship between financial dynamics and the geographical positioning of entities. Other proximity dimensions explored include operational (Alessandrini *et al.*, 2009; Degryse *et al.*, 2018; Presbitero *et al.*, 2014), digital (Veg-Sala *et al.*, 2022; Gorlier *et al.*, 2018), and cultural (Thang, 2023; Cerutti *et al.*, 2007), each addressing how distinct types of closeness affect financial decisions and bank–customer relationships.

In contrast, the concept of economic proximity, as introduced here – namely as the measure of a trade-off between adherence to cooperative values and the new heavier attention towards industry-based, performance-oriented lending – has received limited consideration; only Banfi & Pampurini (2023) suggested a link between our idea of economic proximity and Italian CBs' support for small and medium enterprises concentrated in specific industries. It is natural to note the similarities, as well as the differences, with the studies about relationship banking (Boot, 2000; Degryse & Ongena, 2005; Loukil & Jarboui, 2016), financial constraints (Houston & James, 2001; Paravisini, 2008; Bakhtiari, *et al.*, 2020), industry-based lending models (Udell, 1997; Di & Pattison, 2023), banking specialisation and sectoral credit concentration (Mckillop *et al.*, 2020).

Our proposed conceptualisation of economic proximity is grounded in the literature on *institutional complexity*. Indeed, credit allocation strategies of Italian CBs reflect organisational responses to coexisting, and at times conflicting, institutional logics (Greenwood *et al.*, 2010, 2011). Specifically, as anticipated in Section 1, Italian CBs nowadays face increased management complexity: while they continue to embody a cooperative logic rooted in geographical proximity, solidarity, and support for local economies, they are exposed to aligning forces in a performance-driven practice led by centralised Cooperative Banking Groups. This situation echoes the dynamics studied by Luo *et al.* (2017), who show how firms experiencing pressure from both central and local institutional actors respond through decoupling, i.e., symbolic rather than substantive implementation of institutional demands. In the case of Italian CBs, the pressure to maintain alignment with cooperative values might conflict with expectations for financial performance which can be achieved under a restricted sectorial portfolio. Even if, it is worth recalling that the Ministry of Economy and Finance (2016a) mandates the consolidation of Italian CBs into larger, more stable groups and establishes a state guarantee to help banks offload non-performing loans.

Thus, economic proximity, as introduced in this study, embodies an organisational compromise between these two logics; this conceptualisation aligns with the literature on institutional logics blending (Ramus *et al.*, 2017), where organisations selectively integrate elements of different logics to navigate complexity and divergent forces. Moreover, institutional complexity does not yield uniform and immediate responses. As Raaijmakers *et al.* (2015) pointed out, organisational reactions depend on how decision-makers interpret conflicting institutional demands and on their assessment of which stakeholders confer more legitimacy or which strategic course ensures survival.

Another example comes from Testa *et al.* (2018) that shows how organisations may integrate environmental practices, either symbolically or substantially, depending on the stakeholder constellation and perceived pressures – highlighting how demands from industrial associations and customers led to superficial adoption (greenwashing), while suppliers and investors triggered more genuine commitment. Similarly, Luo *et al.* (2017) document how firms facing dual government pressures adopt Corporate Social Responsibilities reporting as a symbolic gesture while reducing substantive commitments. In both cases, institutional pluralism leads to a pragmatic compromise – a pattern echoed in Italian CBs' sectoral credit strategies. Such a compromise may or may not go in favour of a mutualistic or profit driven approach, depending on market phase, banking structure and geographical/sectorial peculiarities. Hence, economic proximity becomes the organisational manifestation of this compromise. Firms are selected not only for their geographical position but also for their relevance in sustaining legitimacy across cooperative and competitive fields. These decisions involve sensemaking under complex environments (Raffaelli & Glynn, 2014), often resulting in partial adaptations. Some CBs may quickly adopt profit-oriented credit criteria, while others can afford identity preservation and strategic repositioning (Lee & Lounsbury, 2015).

All the above suggests that economic proximity is not merely a mere descriptive pattern of credit allocation, but a situated

Table 1
Mapping of the ATECO sector classifications used in the analysis.

ATECO code	Sector Definition
A	Agriculture, Forestry and Fishing
B, D, E, K, O, P, Q, R, S, T	Residual Activities (including Energy, Public Administration, Defence, Education, Health, Social Work, etc.)
C	Manufacturing
F	Construction
G	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles
H	Transport and Storage
I	Accommodation and Food Service Activities
J	Information and Communication
L	Real Estate Activities
M	Professional, Scientific and Technical Activities
N	Administrative and Support Service Activities

In the first column the letter that identifies each industry which ATECO codes refer to.

Table 2
Number of CBs per year.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
N° of CBs	362	364	361	361	354	345	316	285	263	248	237	222	210

The table shows for each year in the period 2010-2022 the number of the Italian CBs considered.

Table 3
Descriptive statistics of credit allocation by ATECO Sector.

Variable	Mean	Median	StDev	Min	Max	Skew	Kurt
A - Agriculture, Forestry and Fishing	11.696	8.942	9.444	0.000	67.697	1.468	5.449
B, D, E, K, O, P, Q, R, S, T Residual Activities	5.982	5.266	3.433	0.001	33.267	2.242	11.678
C - Manufacturing	17.312	16.630	7.757	0.354	64.221	0.766	4.396
F - Construction	18.349	17.789	7.591	1.436	50.225	0.570	3.592
G - Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	19.455	17.924	8.083	0.207	53.745	0.509	3.094
H - Transport and Storage	2.841	2.433	1.907	0.001	40.592	3.936	55.053
I - Accommodation and Food Service Activities	10.860	6.943	11.040	0.008	75.257	2.346	9.096
J - Information and Communication	0.894	0.719	0.743	0.000	6.244	1.794	7.944
L - Real Estate Activities	8.842	7.910	6.392	0.000	39.059	0.853	3.558
M - Professional, Scientific and Technical Activities	2.571	2.282	1.597	0.001	17.598	1.649	9.225
N - Administrative and Support Service Activities	1.443	1.284	0.984	0.000	8.777	1.543	7.411

The table shows for each industry identified by its ATECO sector the main descriptive measures of the variables considered in the analysis.

organisational response to institutional pluralism – shaped by cooperative identity, market logic, and field-level expectations (Greenwood *et al.*, 2010; Marano & Kostova, 2016). Despite its relevance, this concept remains underexplored, when, instead, a deeper understanding of which industries CBs support – and why – has critical implications for the banks themselves, local economies, and supervisory authorities (Bezzon *et al.*, 2024; McKillop *et al.*, 2020; Zedda *et al.*, 2024). This study contributes to this debate, advancing the conceptualisation of economic proximity and its relevance to contemporary cooperative banking strategies.

3. Methodology

This study investigates economic proximity within the Italian CBs system. The analysis proceeds in three main steps.

First, it examines credit allocation trends across industries, areas (North, Center, South), bank sizes (large, medium, small) and banking groups (ICCREA – GBC – and Cassa Centrale Banca – CCB) in 2010 – 2022. Credit allocation data is categorised by ATECO[1] sector codes and compared at both national and regional levels to explore potential industry-related drivers.

To quantify the credit allocated by CBs to different industries, the sectoral credit share ($R_{i,s,\ t}$) is calculated as follows:

$$R_{i,s,t} = \frac{C_{i,s,t}}{T_{i,t}}, \tag{1}$$

where:

- ($C_{i,s,\ t}$) is the credit allocated by bank (i) to sector(s) in year (t),

[1] ATECO is the acronym of 'ATtività ECOnomiche' that means economic sectors/industries.

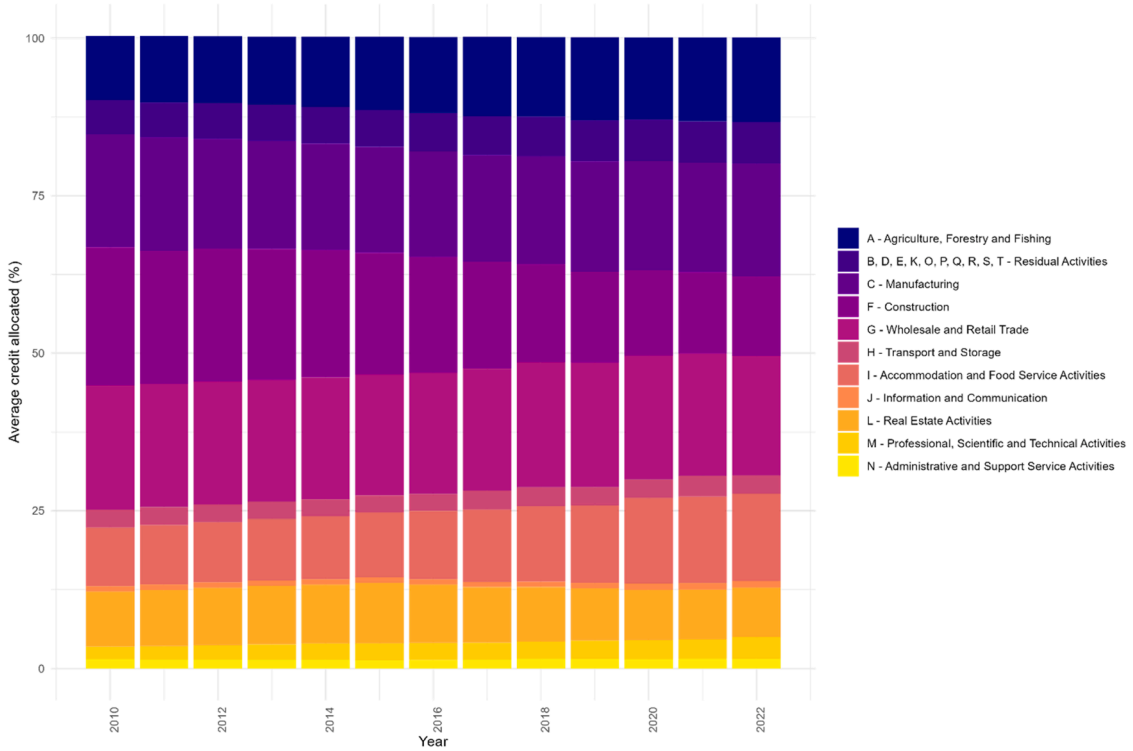

Fig. 1. CBs' sectoral credit allocation across different economic sectors at the national level.

- $\left(T_{i,t} = \sum_s C_{i,s,t}\right)$ represents the total credit allocated by bank (i) across all sectors (s), excluding unclassified allocations.

The resulting sectoral shares provide a normalised measure for comparing credit allocation patterns across regions, bank groups, and time periods.

Secondly, economic proximity is assessed by evaluating the alignment of CBs' sectoral credit allocation strategies with those of the broader Italian banking system (excluding CBs).

To measure this alignment, the Cosine Distance metric (Salton, 1963) is chosen

$$D_C(R_i, R_b) = 1 - \frac{\sum_{s=1}^{S} R_{i,s} \cdot R_{b,s}}{\sqrt{\sum_{s=1}^{S} R_{i,s}^2} \cdot \sqrt{\sum_{s=1}^{S} R_{b,s}^2}} \tag{2}$$

where R_i represents the sectoral credit share vector for CB_i, and R_b represents the corresponding vector for the broader banking sector. This distance focuses on proportional distribution, capturing directional alignment rather than magnitude differences. Values range from 0 (perfect alignment) to 1 (no alignment), with lower values indicating greater economic proximity, presenting a measure of how blended the strategy of the bank i is in accomplishing its statutory mission.

To ensure robustness and enrich interpretation, Euclidean (Bryant, 1985) and Manhattan (Minkowski, 1910) distances are also computed. This because, each metric captures different aspects of proximity: Euclidean reflects absolute deviations, Manhattan highlights cumulative discrepancies, and Cosine reveals alignment in strategic orientation. All distances are calculated annually for each region to capture temporal and spatial variations. In this paper Cosine distances are reported, as this metric – well-suited for compositional data – highlights strategic direction over magnitude and is widely used where relative structure matters most.

To investigate whether the 2016 reform corresponded to a structural shift in credit allocation behaviour, a comparison of Cosine Distance measures before and after the reform year is performed. This analysis aims to test for the presence of a regime change in the strategic orientation of CBs. First, normality and homogeneity of variance across the two periods are analysed. The Shapiro–Wilk test is used to evaluate whether the distributions of Cosine Distance are approximately Gaussian, guiding the choice between Welch's t-test (parametric) and the Mann – Whitney – Wilcoxon test (non-parametric). Then Levene's test is used to assess the assumption of equal variances. These diagnostics inform the most appropriate approach to assess whether the distribution of Cosine Distance has shifted systematically after the introduction of the reform.

Third, to explore the relationship between sectoral credit shares and key CBs' business characteristics over time, two further steps are performed:

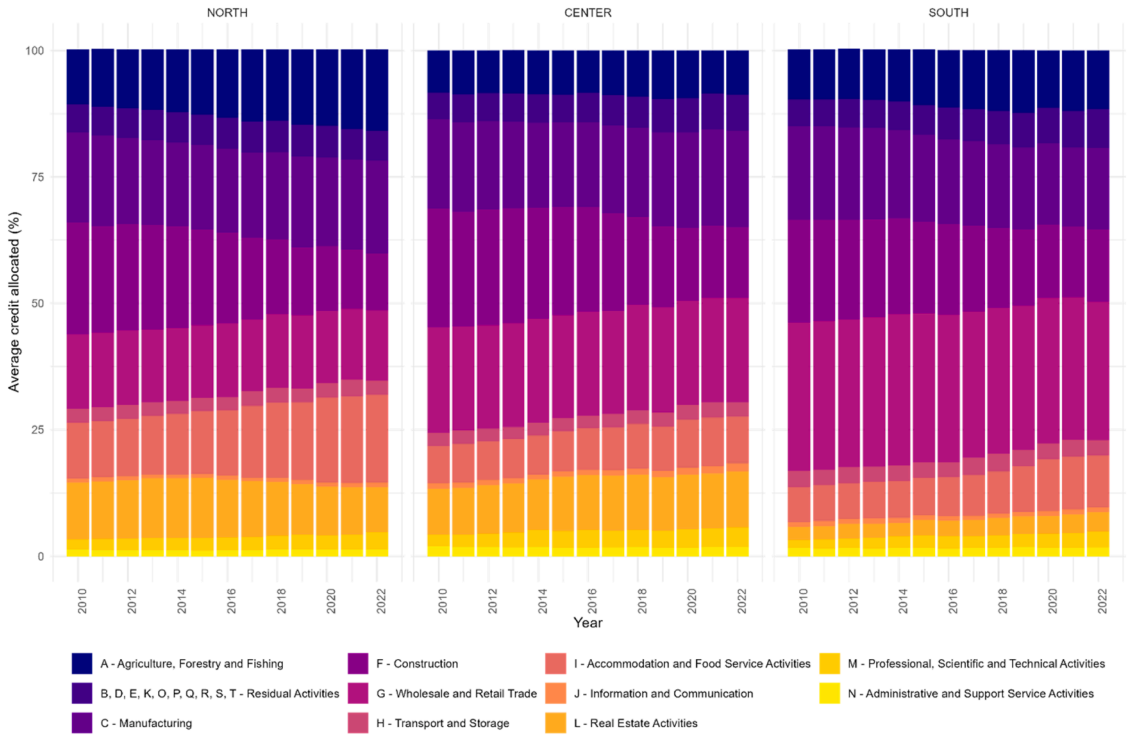

Fig. 2. Sectoral credit allocation across different geographical areas of Italy (2010-2022).

1. a study of the more general connection, employing Cramer's V (Cramer, 1946) as a measure of association, at national level, between the weight of credit granted by CBs to each industry and, alternatively, the:
   - credit risk level (proxied by Non-Performing Loans to Total Loans),
   - profitability (measured using ROA and ROE),
   - efficiency (quantified by the Cost-to-Income Ratio),
   - geographic area (North, Center, South),
   - size (measured by Total Assets),
   - membership to a CBs Group (GBC, CCB)[2];

   The Cramer's V is able to provide a bounded (0 to 1) and interpretable measure of general association strength that facilitates consistent comparison across different variables. As noted by Liebetrau (1983), Cramér's V is not constrained to detecting only linear relationships – as is the case for the Bravais-Pearson correlation coefficient. Instead, it captures any form of relationship, including non-linear and non-monotonic associations. This makes it particularly well suited for the kind of economic and strategic phenomena studied here, where the relationships are often complex and not easily represented by a linear function. This methodology integrates exploratory non-parametric diagnostics (similarly to what done in Wu *et al.* 2014) with confirmatory parametric modelling, ensuring both robustness and theoretical consistency.
2. Fixed and Random effects panel regressions including within the regressors only those business figures that in the previous step appeared to be connected to the weight of credit granted by CBs to each industry (dependent variable).

Thus, the baseline model specification is given as:

$$R_{s,i,t} = \alpha + \beta_k X_{k,i,t} + \epsilon_{i,s,t} \tag{3}$$

where ($R_{s,i,\ t}$) is the share of credit allocated to sector (s) by bank (i) at time (t) and **X** is the vector containing the k regressors[3]. The Hausman test will determine the appropriate model specification.

[2] These indicators are widely adopted in the literature (Pampurini *et al.*, 2024) and serve as benchmarks for performance assessments within the two mentioned Italian CB holdings.

[3] The geographic area and the membership, independently on their significance in the connection analysis, have to be excluded from both regressions since, being time invariant, they cannot be used in the fixed effect and must therefore also be left out from the random in order to obtain comparable results.

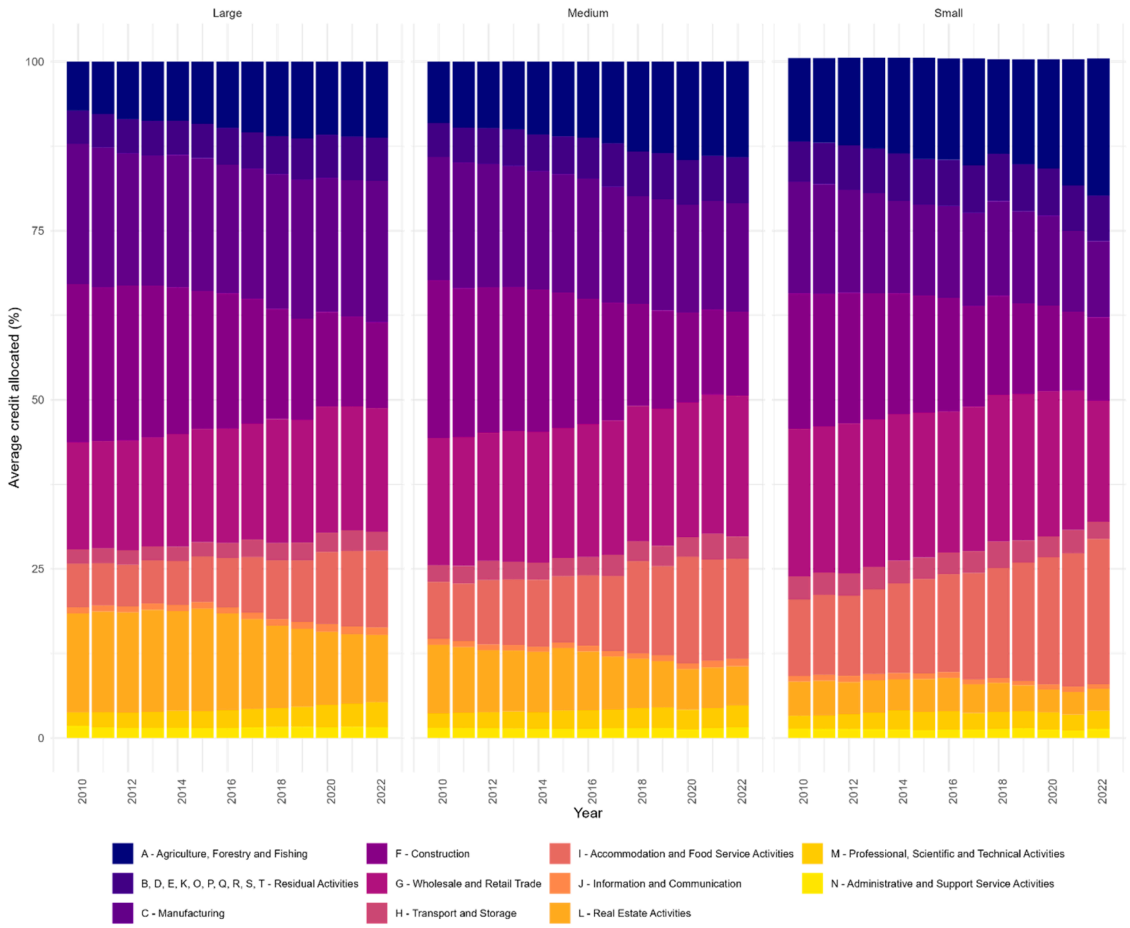

Fig. 3. Sectoral credit allocation across different CBs' sizes.

4. Data and empirical results

This section presents the empirical findings of the study, structured into three parts: (1) description of the context via data, (2) analysis of economic proximity, and (3) panel regressions. Throughout, empirical evidence is linked to the aforementioned theoretical framework on institutional complexity and organisational responses.

The analysis begins by providing an overview of the context via the used dataset and exploring how CBs distribute credit across sectors, bank sizes, and regional contexts.

The dataset covers all Italian CBs in 2010 – 2022, capturing their credit allocation patterns by economic sector, classified according to ATECO codes (see Table 1). Following a data preprocessing phase, sector-specific credit ratios were calculated to normalise the data and facilitate comparisons across banks.

To account for heterogeneity in bank size, CBs were categorised into small, medium, and large groups using total assets (quantile-based thresholds). Table 2 documents the number of CBs over time, while Table 3 presents some moments of the sectoral credit distributions.

Then it was examined how credit allocations evolved nationally. Fig. 1 reveals significant sectoral shifts: lending increased towards "Professional, Scientific and Technical Activities" (M, +70 %), "Accommodation and Food Services" (I, +49 %), and "Agriculture" (A, +32 %), while it declined sharply in "Construction" (F, -43 %).

Next, spatial patterns were assessed. Fig. 2 shows that CBs in the North lend proportionally more to Agriculture and Tourism-related sectors, A (13 %) and I (14 %), suggesting stronger local sectoral ties. Regionally, G (21 %), F (18 %) and C (17 %) dominate credit allocation.

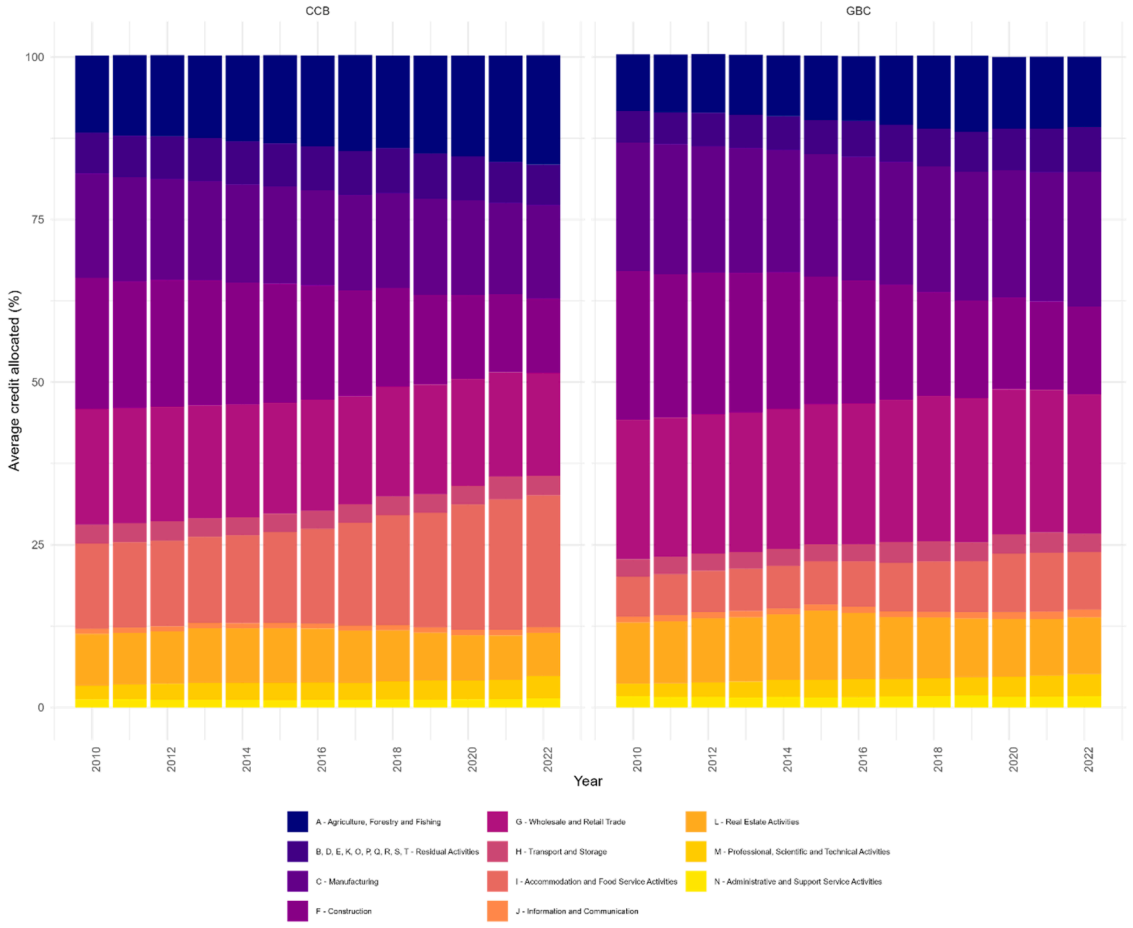

Fig. 4. Sectoral credit allocation across the different CBs banking groups.

Fig. 3 demonstrates that larger CBs tend to allocate more credit to Real Estate (L), 13 %, while smaller CBs focus more on sectors like Tourism (I), 15 %. It highlights differences in sectoral allocations by CB size. Medium CBs allocate to L about 8 % and small CBs just 4 %. Conversely, medium CBs allocate about 12 % to I and large 8 %. Smaller differences between large and small CBs are observed in granting C and A.

Banking Groups also differ in their strategies (Fig. 4). CCB-affiliated banks allocate more credit to I (16 %) and A (14 %), while GBC-affiliated banks emphasise G (22 %) and C (19 %).

Together, these descriptive insights point to considerable heterogeneity in credit allocation strategies. These patterns are consistent with the theory of institutional complexity, whereby CBs balance cooperative obligations and profit-oriented incentives in context-specific ways (Greenwood et al., 2011; Raaijmakers *et al.*, 2015). Fig. 5 supports the idea that CBs have a sectoral credit allocation strategy and highlights the differences both regionally and over time in how CBs distribute credit across the economy. Year-by-year credit share distributions reveal consistent allocations across time in C, while F and L exhibit higher variability. The national trends reflect broader economic transitions, while regional variations demonstrate the flexibility of CBs in adapting to local economic needs.

This drives to present the results around economic proximity by comparing each CB's sectoral credit allocation to that of the broader Italian banking system (excluding CBs), using multiple distance metrics: Euclidean, Manhattan, and Cosine. In Fig. 6 only the Cosine distance results are reported, given the motivations outlined in Section 3 and since, in any case, the other distances are consistently aligned.

Table 4 shows that in regions such as Marche, Umbria, Abruzzo and Piemonte there is a strong strategic mediation, closer to a profit logic than a cooperative one. Conversely, Alto Adige shows higher divergence, likely due to its unique banking structure and CBs role (i.e. the small presence of banks other than the Raiffeisen. As a consequence, the term of comparison is not robust).

This aligns with institutional isomorphism (DiMaggio & Powell, 1983), where CBs adopt patterns consistent with national norms while navigating their cooperative identity.

A shift in Cosine Distance distributions – using bank level data – before and after the reform was tested referring to 2017 as break

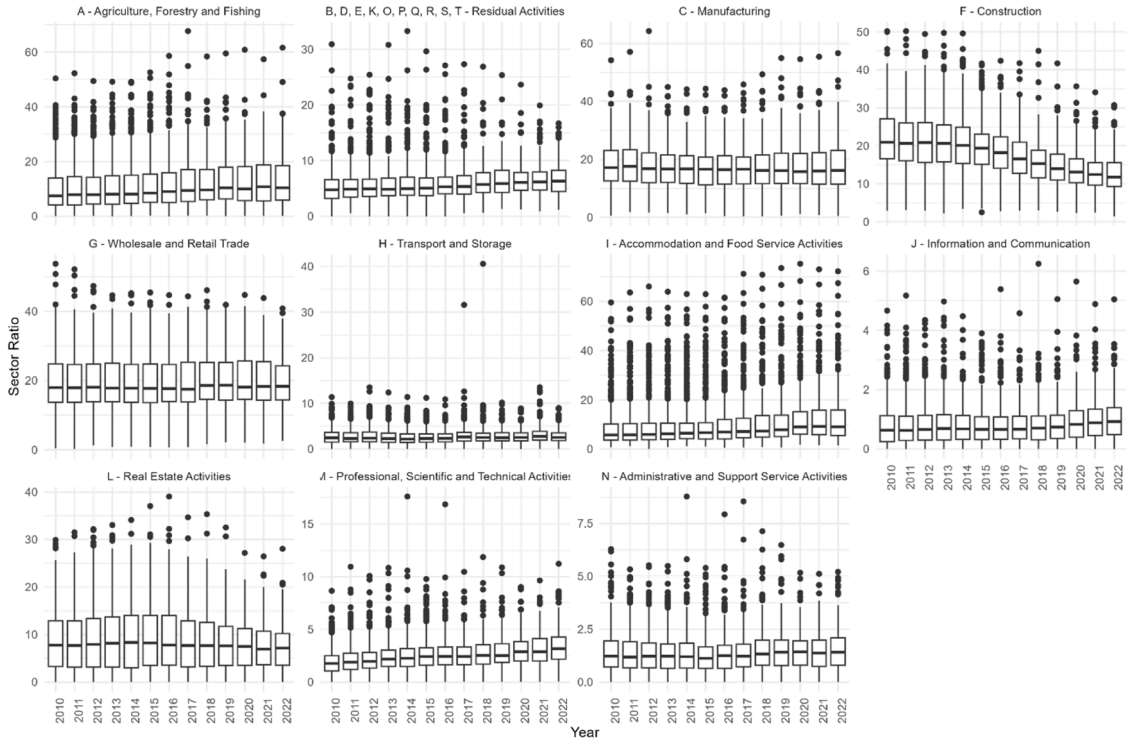

Fig. 5. Year-by-year distributions of credit ratios for each sector.

(since it is the year immediately following the entry into force of the law). The Shapiro-Wilk test rejects normality in both periods (pre-2017 $W = 0.843$; post-2017 $W = 0.868$; $p < 0.001$), and Levene's test confirms unequal variances ($F = 46.08$; $p < 0.001$). Consequently, the Mann-Whitney-Wilcoxon test was applied, revealing a significant difference between periods ($W = 1{,}695{,}868$; $p < 0.001$), suggesting a regime shift in CBs credit allocation strategies.

To verify the existence of connections between the selected variables a Cramer's V analysis was performed, allowing to measure the more general associations. In doing so, the relationship between sectoral credit shares and, respectively, credit risk, efficiency, profitability, size, geographic area and membership is assessed. Table 5 shows some descriptive statistics of all the aforementioned quantitative variables, while Fig. 6 highlights the Cramer's V values time dynamics by sectors of all the mentioned characteristics that, except for H, M and F industries, indicate the existence of a moderate link between the sectoral credit shares and all the considered strategic and business characteristics (except for efficiency and ROE).

To complement this, fixed and random effects panel regressions were run. The results gave estimates that essentially overlap in size and sign[4]; the Hausman tests suggested to prefer the fixed effect approach[5] (Table 6). Results further support our conceptualisation of economic proximity and corroborate previous findings showing that CBs' sectoral credit allocation is systematically influenced by internal bank-level characteristics such as credit risk level, profitability and size. These effects vary by sector, reinforcing the idea of differentiated organisational responses, further aligning with institutional complexity theory. For instance, credit to sectors like Construction and Real Estate is significantly affected by risk and returns, indicating an adaptive, performance-driven approach. Conversely, sectors such as Agriculture and Manufacturing display weaker or more stable relationships with profitability indicators, hinting at enduring ties to cooperative mission and territorial embeddedness. The observed heterogeneity in sectoral allocations – across regions, bank size, and group membership – demonstrates that CBs do not react uniformly to strategic guidance and external pressures. Rather, they adopt hybrid strategies balancing their cooperative identity and the new heavier profit-driven logics stemming from evolving market imperatives. This aligns with theoretical contributions from Greenwood *et al.* (2011), Raaijmakers *et al.* (2015), and Lee & Lounsbury (2015), supporting our framing of economic proximity as an emerging organisational response. The fact that the results for the economic proximity are time variant proves that CBs actively work on achieving their cooperative mission while competing and responding to market and regulatory requirements.

[4] Data available upon request.
[5] Data available upon request.

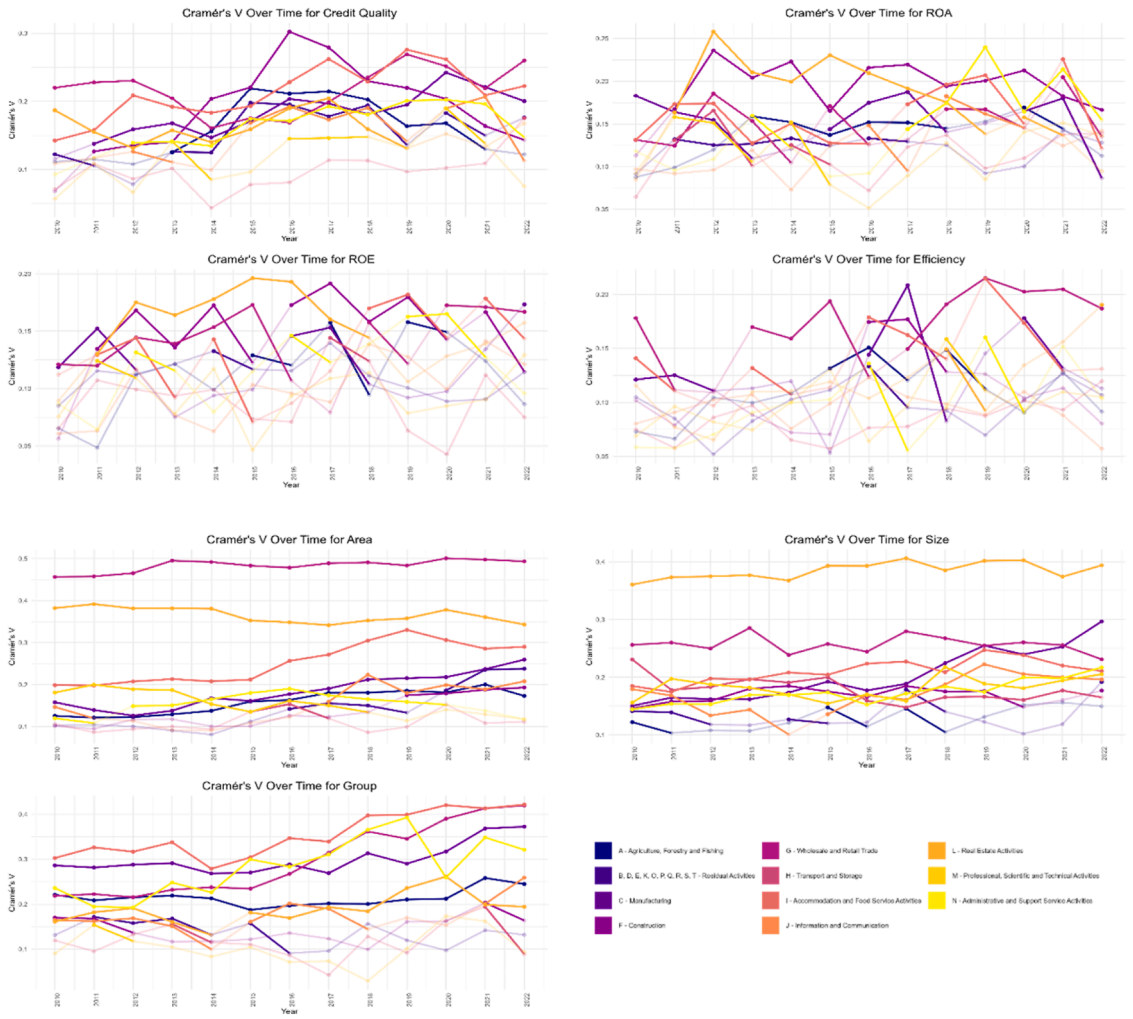

Fig. 6. Cramer's V values time dynamics by sectors.

Table 4
Average cosine distance by region and year.

Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ABRUZZO	0.094	0.095	0.097	0.095	0.095	0.080	0.090	0.090	0.084	0.088	0.097	0.098	0.095
ALTO ADIGE	0.366	0.381	0.374	0.379	0.392	0.405	0.421	0.447	0.447	0.473	0.501	0.505	0.511
BASILICATA	0.213	0.192	0.204	0.198	0.201	0.203	0.206	0.215	0.217	0.243	0.237	0.284	0.260
CALABRIA	0.164	0.160	0.166	0.163	0.166	0.160	0.169	0.198	0.217	0.210	0.225	0.231	0.215
CAMPANIA	0.153	0.151	0.146	0.141	0.140	0.144	0.146	0.138	0.141	0.146	0.158	0.158	0.145
EMILIA ROMAGNA	0.112	0.108	0.108	0.100	0.103	0.099	0.087	0.108	0.122	0.123	0.147	0.131	0.124
FRIULI VENEZIA GIULIA	0.115	0.110	0.116	0.108	0.102	0.093	0.096	0.096	0.103	0.104	0.109	0.108	0.100
LAZIO	0.213	0.206	0.193	0.189	0.189	0.194	0.194	0.187	0.182	0.193	0.199	0.213	0.211
LOMBARDIA	0.092	0.085	0.086	0.083	0.085	0.088	0.094	0.102	0.106	0.111	0.119	0.115	0.113
MARCHE	0.077	0.078	0.082	0.077	0.077	0.078	0.086	0.091	0.084	0.057	0.059	0.060	0.063
MOLISE	0.251	0.265	0.290	0.171	0.217	0.237	0.208	0.178	0.200	0.184	0.284	0.242	0.243
PIEMONTE	0.081	0.079	0.086	0.085	0.088	0.087	0.087	0.110	0.129	0.132	0.160	0.065	0.061
PUGLIA	0.185	0.176	0.174	0.167	0.166	0.163	0.165	0.163	0.168	0.174	0.191	0.196	0.195
SARDEGNA	0.313	0.297	0.275	0.254	0.239	0.226	0.190	0.204	0.209	0.223	0.252	0.244	0.230
SICILIA	0.224	0.220	0.213	0.215	0.216	0.212	0.220	0.218	0.225	0.240	0.213	0.214	0.206
TOSCANA	0.118	0.116	0.108	0.103	0.099	0.099	0.090	0.100	0.119	0.128	0.135	0.128	0.134
TRENTINO	0.214	0.216	0.217	0.220	0.237	0.247	0.255	0.257	0.233	0.244	0.267	0.291	0.309
UMBRIA	0.075	0.081	0.087	0.083	0.084	0.074	0.075	0.076	0.091	0.094	0.116	0.100	0.054
VENETO	0.086	0.086	0.087	0.082	0.086	0.086	0.092	0.110	0.130	0.124	0.148	0.143	0.140

The Table shows the spatial-temporal values of the average Cosine Distance.

Table 5
Descriptive statistics of the quantitative variables used (values in percentages, except for Total Asset that is expressed in Millions of euros).

Variable	Mean	Median	StDev	Min	Max	Skew	Kurt
Non-Performing Loans to Total Loans	0.007	0.005	0.006	0.000	0.054	1.558	7.366
Cost to Income Ratio	0.727	0.703	0.394	-10.353	12.680	6.993	463.105
ROA	0.197	0.276	0.715	-12.710	4.401	-4.590	49.670
ROE	1.916	2.775	7.558	-172.777	34.133	-5.951	92.512
Total Asset	0.733	0.419	3.121	0.003	190.373	54.995	333.121

The table shows some descriptive statistics of the quantitative variables that the Connection Analysis links to sectoral credit shares.

Table 6
- Fixed Effects regression results for the different economic sectors.

Dependent variable. Share of credit granted to:	Non-Performing Loans to Total Loans	ROA	Total Asset	Constant	F-Statistic
B, D, E, K, O, P, Q, R, S, T - Residual Activity	-0.301***	-0.0515	1.352***	5.957***	37.05
	(0.038)	(0.0468)	(0.233)	(0.026)	***
A - Agriculture, Forestry and Fishing	-0.191***	-0.103	3.609***	11.51***	117.57
	(0.062)	(0.0757)	(0.376)	(0.042)	***
C - Manufacturing	-0.313***	0.093	1.336***	17.43***	95.40
	(0.057)	(0.070)	(0.350)	(0.039)	***
F - Construction	1.129***	0.275***	-13.81***	18.30***	44.70
	(0.077)	(0.094)	(0.467)	(0.052)	***
G - Wholesale and Retail Trade	-0.025	0.152**	1.434***	19.51***	117.29
	(0.053)	(0.065)	(0.325)	(0.036)	***
H – Transport and Storage	0.133***	-0.118***	0.896***	2.850***	17.64
	(0.028)	(0.035)	(0.171)	(0.019)	***
I – Accommodation and Food Service Activities	-0.344***	-0.157**	4.412***	10.75***	200.52
	(0.055)	(0.068)	(0.336)	(0.038)	***
J - Information and Communication	-0.045***	0.009	0.490***	0.860***	25.18
	(0.010)	(0.012)	(0.059)	(0.007)	***
L - Real Estate Activities	0.328***	-0.111**	-1.324***	8.825***	93.33
	(0.046)	(0.056)	(0.280)	(0.031)	***
M - Professional, Scientific and Technical Activities	-0.023	0.011	1.947***	2.598***	19.18
	(0.023)	(0.029)	(0.142)	(0.016)	***
N - Administrative and Support Service Activities	-0.083***	0.002	-0.344***	1.405***	22.73
	(0.013)	(0.016)	(0.081)	(0.009)	***

The table shows the results obtained implementing the Fixed Effect regression on the data of each ATECO sector. Coefficient estimates; t-values in parentheses and significance levels denoted by stars (for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$). F-statistic is reported for model fit evaluation.*

5. Conclusions

This paper introduces the concept of economic proximity as a measure of the trade-off between cooperative and tighter profit logics in Italian CBs' credit allocation strategies. The study focuses on designing a measure and assesses if such a measure captures the aforementioned phenomenon. Then, by constructing a bank-level distance score, the evolution of CBs strategic orientation over time is traced, with particular attention to changes observed following the 2016 reform.

The analysis explores whether and how CBs' lending patterns – traditionally anchored in geographical and relational logics – have shifted in response to growing institutional complexity and the increasing needs deriving from belonging to a Cooperative Banking Group. The results outline the overall ability of the economic proximity framework to capture the blending strategies, also highlighting regional differences, and indicate a change in CBs credit allocation policies, so proving some effects of the law. Moreover, these changes seem to be driven by different strategies depending on credit risk, bank size, profitability, and group affiliation.

This study contributes to the literature by operationalising the response of CBs to plural institutional logics over a longitudinal frame, adding in two directions: an empirical dimension to theories of institutional complexity and strategic compromise; a conceptual dimension, providing a tool for the evaluation of these dynamics. While sectoral targeting is not itself new, the process through which CBs embrace this shift – within the context of hybrid governance structures and plural institutional demands – remains underexplored. Economic proximity offers a lens to interpret this situated organisational behaviour under institutional pluralism (Greenwood *et al.*, 2011; Raaijmakers *et al.*, 2015).

Future research could build on this introducing new indicators capable of highlighting new aspects (e.g. the impact of liquidity and membership on sectoral credit allocation). Further studies could assess the distance between actual sectoral credit allocation and the local industrial composition, as well as identify CBs' value-aligned industries, (green sectors, non-profit institutions or local governments aiming to subsidise social projects), to test their lending behaviour towards them. Ultimately, a comprehensive approach would integrate macroeconomic, regulatory, and financial stability indicators to disentangle long-term structural alignment from cyclical or crisis-driven shifts in lending behaviour. Such additional analysis, though beyond the current paper's scope, would further enrich our understanding and offer valuable insights for both CBs and policy-makers.

CRediT authorship contribution statement

Alberto Banfi: Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Valerio Ficcadenti:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Francesca Pampurini:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Anna Grazia Quaranta:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Acknowledgments

The authors gratefully acknowledge the support of Jingnan Li for insightful discussions that contributed to the refinement of the theoretical framing of this study. We altso thank the institutions and individuals who facilitated access to the data used in this study.

Data availability

The data that has been used is confidential.

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