

The spatial dimension of productivity in Italian co-operatives

This report explores the spatial dimension of productivity in the co-operatives of Italy, a country where they make up a relatively large share of total national employment. Co-operatives play a countercyclical role in job creation during crises. In a post-pandemic world, they could make a major contribution to steering the economy towards inclusiveness and sustainability. Productivity growth ensures that co-operatives can achieve both economic and social goals in the future. This report applies a place-based approach to investigate the issue of productivity in co-operatives, given their many interdependencies with local communities. Novel evidence points to the local factors that are linked with the concentration and productivity of co-operatives across regions, sectors and firm size classes in Italy. A comparison with other Italian firms as well as with Spanish co-operatives and other Spanish firms serves to illustrate how productivity performance varies across space and firm types. This report constitutes an empirical test for the analytical approach developed by the OECD Spatial Productivity Lab.

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Executive summary

The need for a tailored strategy to enhance co-operative productivity

The COVID-19 pandemic casts a new light on the important role of co-operatives, as a specific type of social economy organisation, in meeting urgent societal needs. In operating at the forefront of the crisis, many have demonstrated their value in “repairing” social problems, such as labour market exclusion. In a post-pandemic world, the social economy could develop a larger role to “transform” the economy, by fostering more inclusive and sustainable development models.

Similar to other firms, co-operatives are currently facing the repercussions of the pandemic, including falling revenues and deteriorating funding opportunities. These challenges call for the adoption of timely support measures to ensure business continuity and save jobs in the short term. In the long term, co-operatives need to find new ways to rebuild competitiveness and scale social impact.

Boosting productivity will be key to this, to ensure that co-operatives can compete, grow and, thus, scale their social impact in the future. A place-based approach can lead to a better understanding of productivity in co-operatives, in light of their many interdependencies with local communities.

An overview of the Italian co-operative economy

Co-operatives played a counter-cyclical role in creating jobs during past crises. In the aftermath of the Great Recession (2012-2017), the share of co-operative employment grew in 16 out of 21 Italian regions (in 9 of them, by more than 10%). By 2017, Italy’s 57 000 co-operatives employed 1.13 million workers, accounting for 6.6% of total employment – a particularly high share compared to the EU average, where the social economy as a whole (i.e. including also associations, mutual organisations and foundations) makes up 6% of total jobs. In certain industries, the role of Italian co-operatives is even greater. For instance, social co-operatives (which aim to address the needs of society at large) employ about 35% of workers in Health and Social Care, and other co-operative enterprises (whose focus is on members, be they workers, farmers, users, etc.) employ about 18% of all workers in Transport.

Co-operatives are more numerous, relative to population, in the south, but tend to be bigger and employ more people in the north of Italy. While an average co-operative enterprise employs 9 workers in the south, a northern one employs more than 20.

The prevalence of co-operatives also differs significantly across industries. Co-operative enterprises are particularly concentrated in Services to Enterprises, Construction and Transport, as well as, albeit to a lesser degree, Wholesale and Retail Trade. Social co-operatives, in turn, concentrate in the Health and Social Care sector and Education, reflecting their links to local government funded services.

The vast majority of co-operative enterprises and social co-operatives (77% and 60%, respectively) are micro-firms (less than 10 employees). Although few in number, large co-operatives (more than 250 employees), employ close to 37% of co-operative employment in the country and account for 2.4% of total national employment. A characteristic of co-operatives is that each larger size class accounts for a larger share of total employment, whereas for other Italian firms we observe the opposite.

Co-operatives and other firms also differ in terms of employment and worker types. In proportion, Co-operatives employ considerably fewer full-time employees than other firms (66%, compared to 77%), slightly less youth and permanent employees (respectively 13% and 82%, compared to 15% and 84%), but substantially more women (47%, compared to 37%). These differences are partly explained by their concentration within particular sectors.

Understanding spatial productivity in Italian co-operatives

This report suggests that co-operatives are on average less productive than other firms, even after adjusting for their smaller size and concentration in specific sectors. Yet, the difference greatly varies across space (e.g. it was lower than 40 p.p. in eight regions, and lower than 20 p.p. in another three regions in 2017). The different mission of social cooperatives is reflected in their average productivity, which is lower than in other firms in all regions. However, social co-operatives outperform other co-operatives in the sectors of their prevalence, i.e. Health and Social Care, Other Services to Persons and Education. Similar to other firms, the productivity of co-operatives increases with size. However, the gap between the two groups generally increases with firm size class as well.

Co-operatives are generally more prevalent in regions with weak labour markets and fragile social fabric, i.e. the environments where their social mission is crucial. While relatively more numerous, co-operatives also tend to remain smaller in such places, mirroring dynamics observed among non-co-operative firms.

Through a framework of twelve mechanisms affecting spatial productivity, econometric analysis ascertains that regional conditions do matter for productivity performance of Italian individual firms (co-operatives and other) even after the effects of size, age and industries are accounted for. In particular, the following contributing factors are identified.

First, co-operatives tend to be more productive in regions with lower levels of corruption. This strongly suggests that the quality of institutions is particularly important for the ability of co-operatives, which often work at the intersection of the public and the private sectors, to succeed economically. This factor does seem to play a lesser role among other firms.

Second, productivity of all firms, including co-operatives, tends to be lower in regions with higher unemployment rates and where agriculture accounts for a larger share in employment. Despite being on average less productive in regions with weaker labour markets and lower economic development, co-operatives are more numerous in such regions, indicating a role in filling in the voids left by the private sector.

Finally, a survey on co-operatives conducted in mid-2020 under the supervision of the Italian Ministry of Economic Development suggests that the average productivity of co-operatives is higher in regions where more co-operatives are engaged in innovation and digitalisation.

The survey also highlights that many Italian co-operatives have embarked on digitalisation during the pandemic, by switching to teleworking, adopting new technologies and new ways of communication during the pandemic. Yet, multiple barriers hinder the digital performance of Italian co-operatives, including costs and shortages in skills, absorptive capacity and digital infrastructure. Innovation patterns and the related barriers also show a clear geographical variation among co-operatives.

A cross-country comparison

This report also offers a brief comparison between Italian and Spanish co-operatives, illustrating how geography, industrial composition and firm size affect the productivity of co-operatives in a comparable context. Co-operatives account for only about 1.2% of national employment in Spain, and are significantly less numerous compared to Italy (about 20 000 vs. 57 000). Crucially, the Basque Country hosts about half of all co-operative jobs in Spain. Basque co-operatives are highly productive and outperform both co-operatives located in other regions and other firms anywhere in Spain. Other Spanish co-operatives, while more productive than other firms on average, perform similarly to their Italian counterparts when compared

against other firms in their respective national sectors. Ultimately, even beyond the outstanding case of the Basque co-operatives, the comparison with Spain suggests that productivity dispersion resulting from the presence of a high number of, mostly small, firms may be at play in the Italian co-operative economy.

From data analysis to policy recommendation

Beyond generating empirical evidence on productivity in the narrow sense, research conducted for the aim of this report has expanded the body of knowledge in a wide range of policy relevant areas, allowing for a comprehensive approach to enhancing co-operative productivity. Areas for recommendation include:

1. The importance of developing better data and means of tracking the economic health and social impact of co-operatives, to support an evidence-based approach to future policy;
2. The need to improve public awareness of the contribution of co-operatives to economic development and social outcomes, as well as of how enhanced productivity could amplify their impact;
3. The importance of streamlining governance mechanisms and of fostering collaboration with co-operatives in policy design;
4. The need for bespoke instruments that support co-operatives, such as incentives to spur firm growth (as scaling can improve productivity), developing networks that can help co-operatives to achieve scale through partnership, and ensuring that efforts to accelerate the digitalisation of Italian firms at large include co-operatives. Policies need to be place-based, to reflect the different regional dynamics and barriers.

These four areas are interlinked, and should be considered as part of a broader package of efforts aimed at enhancing the productivity of Italian co-operatives.

1. Introduction

This section introduces the main definitions and classifications used throughout the report. It highlights the importance of co-operatives and other social economy organisations during past and the current crisis, with a focus on Italy. Finally, it shows how a tailor-made support strategy for the future development of the co-operative sector could benefit from the analysis of spatial productivity.

1.1. Definitions, classifications and scope

The co-operative movement has a relatively long history in many countries, going back to the 19th century in the United Kingdom, France, Germany and Scandinavian countries, where user, worker, credit and farmer co-operatives were formed as a response to what was seen as excessive wealth concentration: the models that still represent the pillars of the movement today.

In its 1995 Statement on the Co-operative Identity, the International Co-operative Alliance (ICA) defined a co-operative as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise” (ICA, 1995^[1]), supported by a complementary set of defining values and principles (Box 1). In 2002, the International Labour Organisation (ILO) used the ICA’s notion of co-operatives in the context of its Promotion of Co-operatives Recommendation (ILO, 2002^[2]), adding to the international acceptance of such a definition.

Box 1. Co-operative values and principles

Excerpt from the Statement on Co-operative Identity, adopted at the 1995 General Assembly of the ICA after consultation with thousands of co-operatives around the world.

Co-operatives are based on the values of self-help, self-responsibility, democracy, equality, equity, and solidarity. In the tradition of their founders, co-operative members believe in the ethical values of honesty, openness, social responsibility, and caring for others.

The co-operative principles are guidelines by which co-operatives put their values into practice.

1st principle: Open and Voluntary Membership

Co-operatives are voluntary organisations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political, or religious discrimination.

2nd principle: Democratic Member Control

Co-operatives are democratic organisations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary co-operatives, members have equal voting rights (one member, one vote) and co-operatives at other levels are organised in a democratic manner.

3rd principle: Member Economic Participation

Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. They usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing the co-operative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the co-operative; and supporting other activities approved by the membership.

4th principle: Autonomy and Independence

Co-operatives are autonomous, self-help organisations controlled by their members. If they enter into agreements with other organisations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.

5th principle: Education, Training and Information

Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public – particularly young people and opinion leaders – about the nature and benefits of co-operation.

6th principle: Co-operation among Co-operatives

Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional, and international structures.

7th principle: Concern for Community

While focusing on member needs, co-operatives work for the sustainable development of their communities through policies accepted by their members.

Source: Statement on Co-operative Identity, ICA 1995.

Notwithstanding commonalities around core defining characteristics, co-operatives comprise a diverse and multi-faceted set of entities. This variety reflects several features, including the nature of the members of the co-operative (e.g. producers, consumers or workers), the sector of activity (agricultural co-operatives, co-operative banks, etc.) and, in some cases, the governance model (single- and multi-stakeholder). Membership structures (e.g. a secondary co-operative is a co-operative federation in which all members are, in turn, co-operatives) and features (uniform or diverse co-operative membership in terms of the type of individual contribution to the co-operative activity) as well as firm size (small and large co-operatives) can also vary, resulting in a multitude of legal forms across countries (Fici, 2012_[3]).

This report is built around two determining characteristics: type of economic activity (industrial sector) and type of membership (single/multi-stakeholder). Although, as shown above, other differentiating features can also be applied, the two selected here provide for a fair degree of international comparability¹ (using the industry dimension) and scope to analyse factors (type of membership) that have a strong impact on co-operative performance² (Carini, Borzaga and Carpita, 2018, p. 11_[4]).

With regard to industrial sectors, this report employs the Statistical Classification of Economic Activities in the European Community (NACE Rev 2)³ to define ten industrial sectors (Table 2.2).

For the classification by membership, two groupings are defined: “co-operative enterprises” in a broad sense and the specific category of “social co-operatives”, whose prerogative is to support not only members but also society at large, and which first appeared in Italy⁴ during the second part of the 20th century (Zamagni, 2017_[5]).

In the social co-operative model, all relevant stakeholders are members: those who are cared for, carers, workers, and volunteers. For this reason, social co-operatives are often classified as multi-stakeholder co-operatives, while traditional types of co-operatives, whose membership is limited to one type of user, are referred to as single-stakeholder (Birchall, 2017_[6]).

¹ In recent years, academic researchers and policy makers worldwide have given increasing attention to the need for a statistical framework on co-operatives that allows for comparability at the international level. The ILO encourages this process through a wide range of efforts, including by issuing recommendations, organising technical conferences and producing ad hoc reports (ILO, 2017_[27]).

² From an empirical point of view, this report shows that social co-operatives are concentrated in different sectors compared to other co-operatives, and their average productivity performance is slightly lower than non-social co-operatives (with varying gaps across sectors).

³ Which, for the level of aggregation provided in this report, is identical to the International Standard of Industrial Classification REV 4, used in the OECD’s business statistics databases.

⁴ Historical differences are also reflected in the legal forms of co-operatives. In Italy, a single piece of legislation, the Civil Code of 1942 and its subsequent modifications, governs the traditional co-operative models. Social co-operatives are regulated by more recent and specific laws, such as the Italian law 381/1991, which instituted the notion of social co-operative, a model that served as the prototype of the social enterprise in Europe (Fici, 2012_[3]). As a result, Italian social co-operatives are a focus of extensive scientific and policy interest (Depedri, 2017_[72]) and indeed this report. Further proof of the conceptual and legal difference between social co-operatives and other co-operative enterprises is that only the former are included in the third sector according to Italian law: see legislative decree no. 117 of 2017, “Code of the third sector”: <https://www.gazzettaufficiale.it/eli/id/2017/08/02/17G00128/sg>.

Box 2. Italian co-operative types in a nutshell

The Italian Constitution of 1947 pays special attention to co-operatives. According to art. 45, “The Republic recognizes the social function of co-operatives for mutual benefit and without the purpose of private speculation. The law promotes and encourages them through appropriate means and secures, through appropriate controls, their character and purposes”. While the Civil Code of 1942 had already set a general framework for co-operatives, law 6/2003 undertook a major reform to increase their competitiveness in terms of the availability of financial tools, tax benefits and agile corporate governance regulations, while safeguarding the principles of mutuality, solidarity and democracy that underpin the very notion of co-operatives. Regardless of the specific sector of economic activity, the Civil Code (art. 2512) groups co-operatives by the kind of mutualistic exchange they establish with their own members, distinguishing between co-operatives that:

- “Perform their activity mainly in favour of members, [who are] consumers or users of goods or services;
- Avail themselves mainly, in the performance of their activity, of the labour supplied by members;
- Avail themselves mainly, in the performance of their activity, of the goods or services supplied by members”.*

The Italian law also classifies co-operatives based on their type of activity. In this framework, types include, among others, consumers’ co-operatives, production and worker co-operatives, agricultural service/production co-operatives, housing cooperatives, transport co-operatives, fishery co-operatives, retailers’ co-operatives, social co-operatives, and co-operative credit banks. Importantly, co-operatives active in the same industrial sector can fall into different categories, according to their type of activity, making it difficult to match sectors and the type of co-operative in a clear-cut way.

As mentioned above, social co-operatives represent a category in their own right. According to law 381/1991, the purpose of social cooperatives is “to pursue the general interest of the community in the human promotion and social integration of citizens”. The law defines two types of social cooperatives, according to whether they manage social, welfare or educational services (A-type social cooperatives) or undertake any other activity – agricultural, manufacturing or commercial – or deliver services (other than social) for the work integration of disadvantaged persons (B-type social cooperatives). Both types are entrepreneurial and derive their income only or mainly from the sale of products and services. A-type social cooperatives can operate only in the provision of social and educational services, while B-type social cooperatives focus on the employment of disadvantaged workers (e.g. physically or mentally impaired persons, drug addicts, alcoholics, minors of a working age in difficult family situations, convicted persons allowed alternative measures to imprisonment). The disadvantaged must account for at least 30% of workers in B-type social co-operatives and, if their personal conditions allow, can be members of the co-operative itself. B-type social co-operatives are exempted from the payment of national insurance contributions for disadvantaged workers (EC, 2020^[7]). Beyond benefits specific to the latter category, the Italian law rewards the social role of co-operatives of any type with several fiscal advantages. In particular, the share of the profits that co-operatives allocate to indivisible reserves among the members do not contribute to the company's taxable income, provided that the possibility of distributing such reserves among the members is excluded. Tax benefits apply to a greater extent when the co-operative is predominantly mutual, i.e. it operates mainly with its members (Section 5.2.1).

Note: * See Italian Civil Code, current version: <https://www.gazzettaufficiale.it/dettaglio/codici/codiceCivile> (lastly accessed on 7 December 2020).

Source: (EC, 2020^[7])

1.2. Co-operatives and the social economy

Co-operatives are part of the social economy. According to the OECD definition, the social economy comprises a wide range of entities contributing to economic activity with an explicit social purpose. They encompass associations, mutual organisations, foundations, and co-operatives, which, compared to the former categories, have a more pronounced entrepreneurial component. Recently, social enterprises have also been conceptually included into the social economy (OECD, 2018^[8]).

Social economy organisations are governed by specific principles, notably: i) solidarity and mutuality, ii) the primacy of people over capital, iii) democratic and participative governance, iv) the combination of interests of members, users, and general interest, and v) reinvestment of financial surplus into services to members or society (OECD, 2020a^[9]).

Social economy organisations put social and environmental concerns at the heart of their business model, prioritising social impact over profit maximisation. This characteristic translates into a different way of organising their activity, compared to other economic actors. The double mission (economic and social) of the social economy is typically valued by diverse stakeholders for the range of benefits it produces (public and collective benefits, direct individual benefits, indirect benefits). As a result, social economy organisations can mobilise a variety of resources (e.g. revenues from sales, public subsidies, donations, volunteering) from different actors (such as the public sector, firms, foundations, individuals).

At the same time, social economy organisations engage diverse stakeholders in their decision-making processes. Such governance models facilitate informed decisions about economic and social impact. They also increase the degree of democracy in society. In so doing, social economy organisations operate mainly at the local level and are well suited to respond quickly to issues that arise in their local communities, implementing sustainable practices that prioritise human and environmental needs.

Finally, these organisations often experiment with new and co-operative ways of work in developing place-based solutions, while building on collective goals and the complementary assets of different social actors, such as civil society, policy makers, entrepreneurs and researchers (OECD, 2020b^[10]).

Box 3. Social impact measurement

The idea of social impact is strictly related to the social value produced by organisations. Although it has many definitions and can be used almost interchangeably with terms such as “social return”, “social value creation” and “social accounting”, social impact is usually defined by literature in reference to four key elements:

- The value created as a consequence of someone’s activity;
- The value experienced by beneficiaries and all others affected;
- An impact that takes account of both positive and negative effects;
- An impact that is judged against a benchmark of what the situation would have been without the proposed activity.

Social impact measurement aims to assess the social value and impact produced by the activities or operations of any for-profit or non-profit organisation. Although any business can have a social impact, social economy organisations are explicitly designed to create social value while addressing general-interest challenges and are therefore expected to produce social impact.

With growing attention being paid to the contribution of the private sector to sustainable development, the pressure is rising to align impact measurement practices with international standards in order to promote comparability.

Source: (OECD, 2015^[11]); (OECD, 2021, forthcoming^[12])

1.3. COVID-19 and the social economy: current and future roles

Co-operatives and other social economy organisations enhance the ability of the stakeholders to cope as well as to prevent or reduce the impact of crises – be they natural disasters, financial and economic downturns, health-related or difficult social and political transitions. In particular, such organisations can play an important role in terms of building capacities within their host communities, which is essential if lasting solutions to the crisis-related problems are to be found. Co-operatives and other social economy organisations can also facilitate local ownership and sustainability. Together with trade unions, business representatives and other civil society organisations, they can help by creating employment, alleviating poverty, promoting social dialogue, implanting democracy and addressing social protection and other socio-economic needs (ILO, 2001^[13]).

Co-operatives proved to be very resilient during previous economic downturns. For example, financial co-operatives fared better during the 2008 financial crisis compared to the investor-owned banks, mostly due to their higher aversion to risk and greater appreciation of members’ money. Savings and credit co-operatives, co-operative banks and credit unions continued to grow and provide funds for small and medium firms, indirectly creating employment and maintaining the livelihoods of communities (Birchall, 2013^[14]).

Indeed, during periods of public health emergencies, financial crises (including the Great Recession of 2007-2009) and natural disasters (e.g. the 2004 Indian Ocean earthquake and tsunami), co-operatives and wider social economy organisations played a crucial role in helping to reconstruct their communities. Social economy organisations are rooted locally and their core purpose is socially driven. As a result, they are particularly successful in reaching out to the vulnerable groups and re-integrating them into the society, thus filling some of the voids left by the state and the market (OECD, 2020b^[10]).

The COVID-19 crisis has cast new light on the crucial role of co-operatives and other social economy actors in meeting societal needs. The demand for socially-driven services has never been greater. These entities have been a trusted partner for governments and citizens worldwide, operating at the forefront of the pandemic to address urgent sanitary and social needs. The International Co-operative Alliance has gathered an extensive list of practices from different sectors showing how co-operatives around the world have responded to help members and their communities during the pandemic.⁵

First, they have been providing a range of crucial health and social services. With medical capacity limited due to an abnormal increase in the number of patients, social economy organisations alleviated the pressure on the health service, e.g. by reducing the number of unnecessary hospital visits through homecare.

Secondly, they have been adjusting their operations to serve the immediate needs of vulnerable and isolated communities and/or by ensuring continued employment. Examples include, food providers engaged to relieve hunger of the elderly or the poor during the lockdown, firms shifting operations from apparel production to the production of reusable facemasks, and social co-operatives retaining vulnerable women in employment.

In addition, they have been developing partnerships with local authorities to help provide services and mitigate the direct impact of the crisis, especially for the most vulnerable groups (e.g. the elderly), in fields such as containment measures, health care, social services, and local economic development, where proximity plays a major role. Importantly, co-operatives have helped governments cope with the crisis by offering concrete bottom-up solutions, in particular those born via digital platforms (crowd-funding and -sourcing, information sharing etc.).

In so doing, social economy organisations have confirmed their traditional mission to “repair” social problems, such as homelessness, labour market exclusion and other forms of marginalisation experienced by vulnerable groups. In a post-COVID world, the social economy will increasingly become an important player and contribute to the “transformation” of the economy and society by promoting more inclusive and sustainable development models. The current crisis calls for a re-balancing of efficiency and resilience throughout the economy. Social economy organisations are ideally positioned to expand social innovation and to come up with ideas and practices that respond to the pressing environmental and societal challenges in the future.

Beyond responding to the health emergency, social economy actors can increase economic and social resilience by complementing public action and implementing new innovative ways. On one hand, they address social needs that the market economy may fail to cover (e.g. in the presence of collective goods, information asymmetries or high market concentration), and complement public action if it is insufficient (e.g. due to bureaucratic inefficiency, budget constraints, poor co-ordination across sectoral policies, and the median voter bias). For example, in the area of work integration, the social economy (especially social co-operatives) creates employment opportunities for people excluded from the labour market. On the other hand, social economy actors design, experiment and implement innovative ways to organise economic activity in a more inclusive and sustainable way, generating responsible practices that can transform the economic system. For instance, they have pioneered market niches in fields such as waste and reuse that now are at the core basis of the circular economy, a model that is all attracting all types of firms. While these functions have been particularly visible during the current crisis, there is a potential for the social economy to play an even stronger transformational role during the recovery to help communities to “build back better”.

Indeed, the social economy can benefit societies after the COVID-19 crisis from different angles. In addition to its role in labour inclusion, it fosters social cohesion and a sense of community by engaging citizens in different ways (e.g. as volunteers or members of co-operatives and associations). Social economy

⁵ ICA web page on COVID-19: <https://www.ica.coop/en/co-operative-endeavors-during-covid-19>.

organisations are strongly rooted in the territory where they operate, which facilitates the rapid mobilisation of local stakeholders to address urgent needs (Noya and Clarence, 2007^[15]).

Lastly, the social economy can help reshape post-crisis economic and social systems by inspiring socially and environmentally responsible practices among economic actors and by scaling social economy business models. Scaling strategies for social economy organisations, such as co-operatives and social enterprises, increases social impact and includes replicating and diversifying activities in new markets and geographical areas to reach broader target populations. Wider penetration of the social economy empowers individuals and groups to actively participate in social innovation processes (OECD, 2020b^[10]).

1.4. COVID-19 and Italian co-operatives: trends and policy responses

Similar to other firms, social economy organisations are currently dealing with the repercussions of the COVID-19 pandemic, including a shortfall in revenues, liquidity issues, and deteriorating funding opportunities that threaten survival. In fact, the majority of social economy players expect their situation to worsen without further support from the government (OECD, 2020b^[10]).

A finer differentiation could be made between social economy organisations with commercial revenues as the main source of income (sales of services or goods) and those predominantly reliant on public grants. The latter group is more likely to report significant drops in turnover over the coming years, as pressures on public finances mount.

The economic impact of the COVID-19 crisis on social economy organisations varies greatly depending on the sector of activity, an organisation's size, age, operational mode and financial structure among other factors. This diversity calls for differentiated support measures and so, in turn, creates challenges for policy makers in developing the relevant instruments. The pandemic pushed many social economy actors to adjust their operations in order to ensure cash flow and financial sustainability, for example by diversifying to new activities or modes of delivery (such as production of face masks or offering pre-packaged meals and drinks to-go) or closing down some of their activities. Given the generally smaller scale of social economy actors, their limited security and cash reserves combined with difficulties in accessing particular skill sets and difficulties in accessing government support, the current crisis can have a larger negative impact on the social economy (OECD, 2020b^[10]).

These challenges call for the adoption of timely and tailored support measures to ensure business continuity and job preservation in the short term. Since the outbreak, national governments of the OECD member countries have been very active in supporting firms, SMEs in particular. The most widely used instruments include income and profit tax deferrals, loan guarantees and direct lending, and wage subsidies. However, the overwhelming majority of instruments do not differentiate between firm target groups, leading co-operatives and other social economy organisations to compete with traditional businesses that are better equipped to access information on and to qualify for incentives (OECD, 2020b^[16]).

Italy's main recovery package contains two major support policies specifically devoted to co-operatives. First, it appropriated EUR 15 million to refinance the main national facility providing long-term loans at subsidised rates for labour and social co-operatives, known as "Nuova Marcora". Second, the newly established "SME Asset Fund", a broader initiative aimed at strengthening the capitalisation of Italian firms with a turnover value between EUR 10 and 50 million, foresees that an ad hoc institutional investor will specifically address co-operatives (Frangi, 2020^[17]). Subnational governments also offered support policies for SMEs. In Italy, regions introduced a number of regulatory simplifications, public financing schemes and credit guarantees, as well as incentives for teleworking, out-of-work benefits and tax breaks. While most measures do not differentiate between target groups, in some cases there is an explicit focus on co-operatives and other social economy organisations (OECD, 2020c^[18]).

Box 4. Italian regional policies for co-operatives during COVID-19

A collection of Italian regional policies in the context of the COVID-19 (March and April 2020) pandemic targeting or involving players from the social economy (co-operatives, associations, foundations, social enterprises, etc.):

Basilicata

- Establishment of a fund for financing co-operatives (cap of EUR 350 000 per entity), to support their capitalisation and maintain employment levels (total allocation EUR 3.9 million).

Bolzano/Bozen, Autonomous Province

- Agreement between the Autonomous Province, local banks and guarantee co-operatives to facilitate the provision of loans on preferential terms.

Calabria

- Forms of financial support to small businesses such as micro-credit and liquidity support measures for social enterprises (funded by the 2014-2020 ROP ESF).

Emilia-Romagna

- Aid of EUR 6 million to firms and associations in the cultural sector distributed as advanced payments;
- Modifications of regulations of the regional revolving fund for co-operatives. It finances investments in both capital goods and current expenditures of co-operatives. In addition, size requirements of beneficiaries are extended, including co-operatives exceeding the EU definition of SMEs;
- The Budget Committee of the Regional Assembly developed an extraordinary plan for 'Phase 2', which provides, among other things, a budget of EUR 18 million to facilitate access to credit for SMEs, including co-operatives.

Friuli-Venezia Giulia

- Support to vocational training institutions to facilitate their switch to distance learning. Grants, with a total budget of EUR 500 000 from the 2014-2020 ROP ESF, target the entire workforce, including fixed-term employees, self-employed, owners of micro-enterprises and partners of co-operatives;
- Adoption of a memorandum of understanding to encourage advance redundancy payments by the institutions associated with the Regional Federation of Co-operative Credit Banks.

Liguria

- Revolving fund for subsidised loans (interest rate of 0.75%) to enterprises and associations in the cultural sector. The loans range from EUR 10 000 to EUR 25 000 and amortisation plans can span over five years (EUR 500 000 allocated).

Lombardy

- Allocation of EUR 4 million for the call "Industrial Research and Experimental Development", in the framework of the ROD ERDF 2014-2020, as a part of the project "COVID-19: Together for Research for All". The contribution covers 40% of the investment made by companies, with a minimum grant of EUR 300 000 and a maximum of EUR 1 million. The programme provides for an additional financial contribution of EUR 3.5 million by two banking foundations (Cariplo and Veronesi).

Trento, Autonomous Province:

- Re-employment of workers excluded from the labour market (a plan known as "Progettone") in essential industries.

Source: (OECD, 2020^[18])

1.5. The need for tailored post-crisis support to co-operatives in Italy

Policy design should take into account that the ultimate objective of co-operatives is not profit maximisation, but rather to provide goods and services either to their members or to the community at large (Borzaga et al., 2014^[19]).

Therefore, beyond recovery policies applicable to firms at large, and having in mind their potential in transforming social and economic development models, co-operatives could benefit from a more tailored, long-term strategy for a post-pandemic world – one that allows overcoming budgetary and market constraints while further meeting social and environmental needs. The countercyclical role traditionally played by co-operatives in job creation in the aftermath of crises and their broader social impacts, as well as their differences from traditional businesses in terms of legal forms, management structure and sectorial distribution, are other reasons justifying a differentiated approach in planning a long-term development strategy.

Co-operatives play a particularly prominent role in Italy, accounting for a significant share of employment in different industries. In 2015, Italy's 59 000 active co-operatives – equal to 1.3% of the enterprises active on the national territory – employed, in terms of annual average employment positions, over 1.2 million people (employees and self-employed), 33 000 external collaborators and 10 000 temporary workers, equal to 7.1% of total private employment. Net of those in the financial and insurance sector, co-operatives generated a value added of EUR 28.6 billion, equal to 4% of the value added by the private sector (ISTAT, 2019^[20]).

Supporting co-operatives is an utmost priority also in light of their proven stabilising effect on employment during the downturns, given the particular emphasis their business models devote to job retention (Delbono and Reggiani, 2013^[21]).

Box 5. Italian co-operatives during the Great Recession

During the 2008 financial crisis, Italian co-operatives, unlike other companies, continued to grow both in total numbers and in employment. In 2007, the year before the crisis, there were close to 51 000 co-operatives in the country. In 2011, the year when the sovereign debt crisis exacerbated the impact of the financial crisis, the number of co-operatives went up to almost 57 000 (growth of 12% compared to 2007) and reached 59 000 in 2015 (up 16% compared on 2007). Co-operative employment grew by 18%. In contrast, enterprises outside of the co-operative sector decreased in numbers by 2% and their employment shrank by 6% during 2007-2015.

Source: (ISTAT, 2019^[20]).

Since the COVID-19 outbreak, however, Italy has been reporting a slowdown in co-operative registration rates. During the first eight months of 2020, 1 600 new registrations were reported against 2 400 in the same period of 2019, a drop of 34% (Fondo Sviluppo, 2020^[22]). The COVID-19 Observatory established by Legacoop, one of the main Italian co-operative representative organisations (Box 6), confirms a widespread sense of uncertainty among surveyed co-operatives. Seven out of ten indicate a substantial reduction of activities, with potential repercussions for their ability to pay salaries. The main challenges reported are low short-term liquidity, decreased demand and difficulties in ensuring the continuity of supply. About one co-operative out of five foresees that difficulties will persist for more than a year, calling for urgent action (Legacoop, SWG, 2020^[23]).

Box 6. The key role of Italian co-operative representative organisations

Co-operative representative organisations are key actors in Italy's industrial relations system. The three largest organisations (Confcooperative, Legacoop and Associazione Generale Cooperative Italiane – AGCI) negotiate with trade unions to sign sectoral agreements covering their affiliates and provide a range of support services for the start-up and development of co-operatives. In 2011, they established a joint umbrella organisation, named Alliance of Italian Co-operatives (ACI), to coordinate their efforts in representing the co-operative movement vis-à-vis the Italian policy makers (Eurofound, 2019^[24]).

The history of the Italian co-operative movement has its roots at the dawn of the Italian unification, and allows to trace the main events in national history up to the present day. The *Federazione Nazionale delle Cooperative* was founded in 1886 by delegates representing the co-operative movement. In 1893, the federation was renamed Lega delle Cooperative (Legacoop). At the time, the federation included Catholic groups, in solidarity with socialists. In 1919, the non-secular component split and founded the *Confederazione delle Cooperative Italiane* (Confcooperative). In the 1920s, the fascist regime banned co-operatives and unions, and both organisations were disbanded. Shortly after World War II, they were re-established, inspired by communist and Catholic political views respectively. Their activism was key to obtain that the social role of Italian co-operatives was acknowledged by the republican Constitution of 1947. In 1952, AGCI was founded on the initiative of a group of co-operatives inspired by liberal and social-democratic values, further attesting to the complexity of the Italian political spectrum. Another turning point happened in the early 1970s, when the international economic crisis worsened the financial situation of many co-operatives. In this case, legislation aimed at improving the degree of capitalisation of Italian co-operatives was enacted, inspired by representative organisations (Menzani and Zamagni, 2010^[25]). Once the ideological oppositions typical of the Cold War became obsolete, the ground was ready to experiment with a unified form of representation, which came into being in 2011 with the establishment of ACI.

Although several countries worldwide show forms of cross-sectoral co-operative representation,* the case of Italy appears to be prominent in terms of its size and scope. According to ACI data,** its members account overall for 90% of the Italian co-operative movement and represent approximately 1.15 million employees, more than 52% of them are women and almost 55% of them are members and therefore owners of the co-operatives. ACI-affiliated co-operatives play a particularly prominent role in agrifood, where they account for 58% and 40% of the gross saleable production of wine as well as fruits and vegetables respectively. About 34% Italy's large-scale retail trade sector is in the form of ACI-affiliated consumer co-operatives. In the credit sector, ACI co-operatives account for almost 30% of banking intermediation, making up 20% of all branches at national level, which ensures a widespread support of Italian SMEs across regions and localities.

Note:* See, for instance <https://coopseurope.coop/about-us/our-members>.

** ACI web page <https://www.alleanzacooperative.it/l-associazione>.

Source: (Eurofound, 2019^[24]); (Menzani and Zamagni, 2010^[25]).

1.6. Higher productivity of co-operatives can be targeted by policy

A traditional approach to enhancing the social impact of co-operatives and social enterprises is to expand or replicate well-functioning social business models, establish partnerships or share knowledge (European Commission, OECD, 2016^[26]). Yet, an assessment of the effectiveness of these measures is limited due to the many specificities of co-operatives, their operation modes and other contextual factors, which hinder robust analysis generalizable across typologies and countries. Likewise, despite recent progress towards a unified statistical framework at the international level (ILO, 2017^[27]), and the presence of advanced empirical work with a global reach (ICA, EURICSE, 2020^[28]), measuring the economic performance of co-operatives remains a challenge. This report aims to contribute to expanding the knowledge base on the matter by focussing on productivity.

More productive co-operatives are more likely to continue operations and scale up, and so, in turn, are more likely to deliver greater social impact. In the long term, stagnating productivity can undermine the ability of co-operatives to stay competitive, grow and, possibly, survive.

Productivity is a major indicator of enterprise competitiveness, with a strong spatial dimension reflecting for example, agglomerations effects, infrastructure, geography, local regulations, etc. (Tsvetkova et al., 2020^[29]). A full understanding of productivity therefore requires a subnational perspective, which should be an integral part of productivity-enhancing policy design.⁶

The centrality of the spatial perspective is even more evident when productivity of co-operatives comes to the fore. Co-operatives and other social economy actors are strongly anchored in local communities, where they mobilise multiple resources and collaborate with different stakeholders to create individual and collective benefits (MacPherson, 2013^[30]). In particular, the presence of meaningful interdependencies with local socio-economic actors justifies an analysis of place-specific factors affecting co-operative productivity – a necessary step towards informing long-term support strategies.

The ultimate objective of this report is to inform the agenda of Italian national and regional policy makers with fresh evidence stemming from a novel analytical approach, centred on the nexus between productivity, regional conditions and social impact. In light of a growing demand for socially-driven services worldwide, improving co-operative productivity is of major importance. Setting up an analytical model that allows for repeatability in other countries would constitute a stepping-stone for broader international research on the matter.

⁶ For more information, visit the web page of the OECD Spatial Productivity Lab: <http://www.oecd.org/cfe/leed/spl.htm>

2. Overview of the co-operative sector in Italy

Italy has a well-established co-operative sector. This section provides an overview of the position of co-operatives in the national economy, paying specific attention to their regional, sectoral and size distributions. A general outlook on co-operative concentration and employment composition serves as a background for the analysis of spatial productivity.

Italy has a well-established co-operative economy. Co-operatives are an important part of the national economic and social life in Italy. In 2017, there were about 57 000 co-operatives in the country (based on the ASIA dataset of ISTAT). About 42 000 of them were classified as co-operative enterprises (CEs) and 15 000 as social co-operatives (SCs).⁷

Co-operatives employed more than 1.13 million workers in 2017, accounting for 6.6% of national employment. About 719 000 people (4.2%) worked in co-operative enterprises and about 410 000 (2.4%) in social co-operatives. The share of co-operative employment in Italy is considerably higher compared to many other European countries (such as Spain, the focus of Section 4.) and the EU in general, where the social economy as a whole (which includes besides cooperatives, not-for-profit organisations and charities) employed about 6% of all workers in 2015 (CIRIEC, 2017_[31]).

Between 2012 and 2017, the share of employment in co-operatives moderately, from 6.4% in 2012. Reflecting their growing importance as employers in regional economies, the share of co-operative employment grew in 16 out of 21 Italian regions. The distribution and prevalence of co-operatives differs widely across industrial sectors. Social co-operatives are prominently represented in the Health and Social Care sector, employing about 35% of its workers. Co-operative enterprises employ about 18% of all workers in the Transport sector.

The employment composition of co-operatives differs from that of other businesses. In proportional terms, co-operatives employ considerably fewer full-time employees, slightly fewer youth and permanent employees, but substantially more female employees. Of the total employment of co-operatives in 2017 (on full-time equivalent, FTE, basis), 13% were under 30 (compared to 15% in other businesses), 47%

⁷ Co-operative enterprises include all co-operative models other than social co-operatives. Section 1.1 sets out the rationale for such this distinction, and Box A.1 provides more details on the matter.

were female (37% in other businesses), 82% were permanently employed (84% in other businesses), and 66% were full-time employees (77% in other businesses).⁸

In 2017, co-operatives generated EUR 31 billion of value added (gross value minus cost of intermediate inputs), accounting for about 2% of the national GDP. The shares of co-operatives in national GDP and employment are higher (by 0.4 additional percentage points in value added and 0.3 percentage points in employment shares in 2015) if non-co-operative firms that are fully owned by co-operatives are included in calculations (Borzaga et al., 2019^[32]).

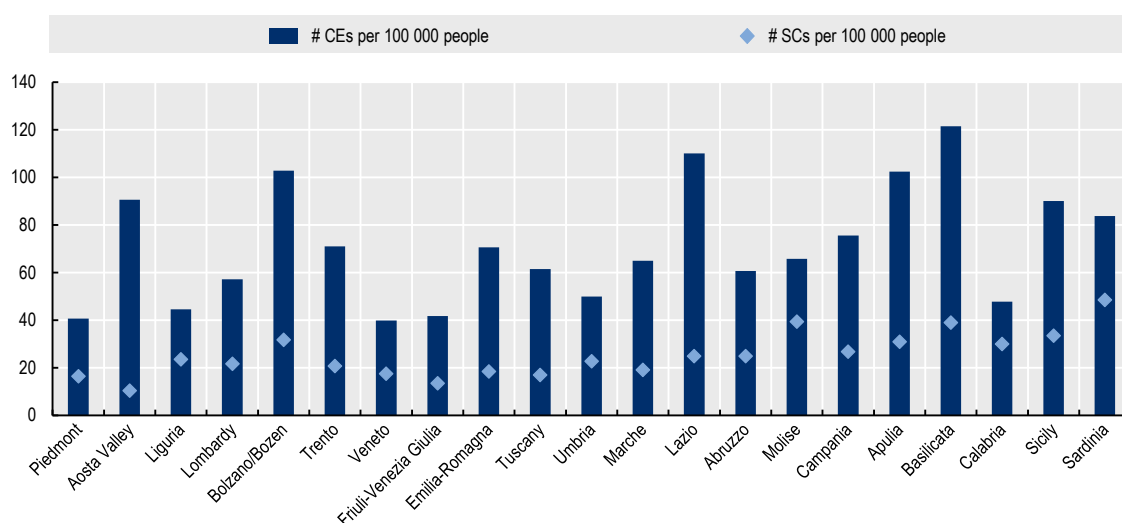
2.1. Co-operative concentration

2.1.1. Geographical patterns

There is considerable regional variation in the concentration of Italian co-operatives, which reflects differences in the economic and social fabric across the country. For example, the number of co-operative enterprises per 100 000 residents ranges from 40 in Veneto to 125 in Basilicata (70 for the national average), while the number of social co-operatives per 100 000 residents ranges from 10 in Aosta Valley to 55 in Sardinia (24 on national average) (See Figure 2.1). Differences are even more pronounced at the finer, provincial level.⁹

Figure 2.1. Prevalence of co-operatives varies considerably across regions

Population-adjusted number of co-operative enterprises and social co-operatives by region.



Notes: Data for 2017. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on ISTAT/ASIA and Eurostat.

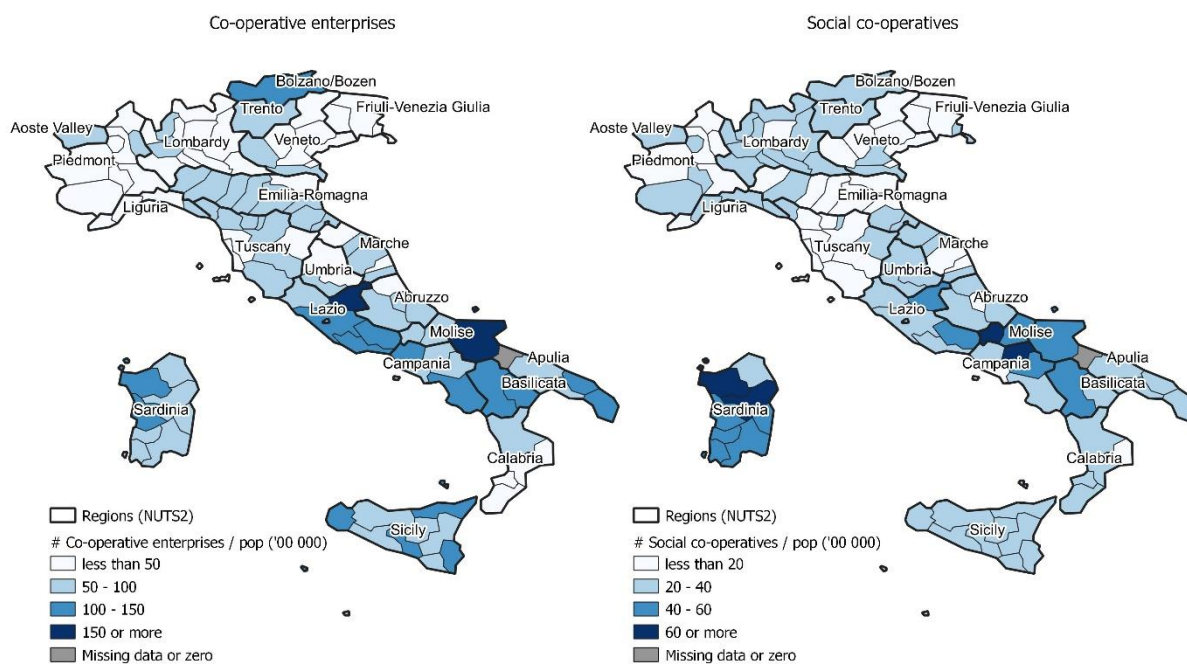
⁸ Part-time employment is measured in terms of full-time equivalent for the sake of consistency with the other labour statistics provided throughout the report. Doing so will emphasise the allocation of total hours worked across part-time/full-time working employees, rather than in terms of number of employees or head counts.

⁹ The NUTS (*Nomenclature of Territorial Units for Statistics*, a geocode standard for referencing the subdivisions of countries for statistical purposes in the European Union) codes for Italy foresee three levels. NUTS 1 includes five Groups of regions. NUTS 2 includes 21 Regions (region Trentino-Alto Adige/Südtirol is split into the Autonomous Provinces of Trento and Bolzano/Bozen). NUTS 3 includes 107 Provinces.

Figure 2.2 maps the population-adjusted number of co-operative enterprises and social co-operatives at the provincial level. Generally, both co-operative enterprises and social co-operatives tend to be more concentrated in the South. The number per 100 000 of population ranges from under 50 to over 150 for co-operative enterprises and from under 20 to 60 or more for social co-operatives. The map also reveals notable differences across provinces within the same region.

Figure 2.2. Concentration of co-operatives tends to be higher in the south of Italy

Population-adjusted number of co-operative enterprises and social co-operatives by province.



Note: Data for 2017 or last available year before 2017. Number of co-operative enterprises and social co-operatives per 100 000 people, by province (NUTS3). The labels refer to the respective regions (NUTS2).

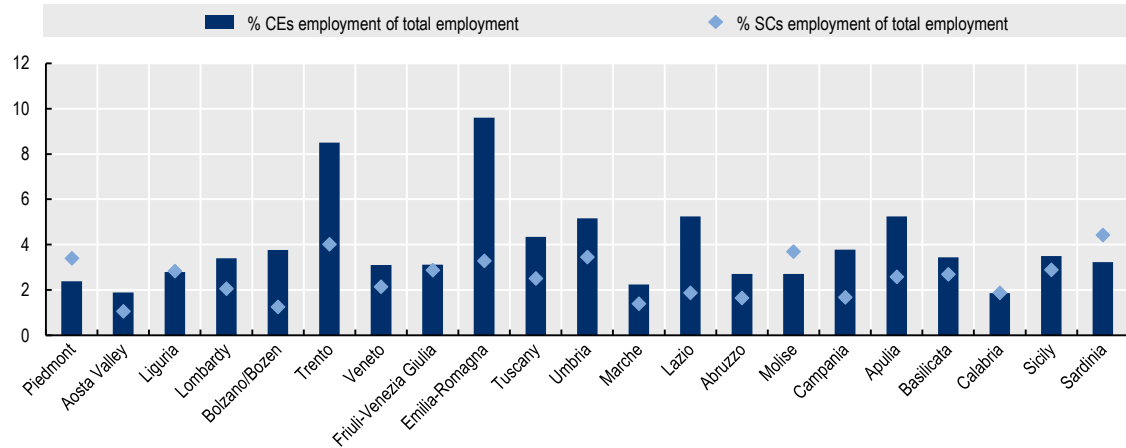
Source: OECD calculations based on ISTAT/ASIA and Eurostat.

In two out of three Italian regions, the co-operative sector employs between 5% and 8% of all workers (Figure 2.3).¹⁰ Two territories, however, stand out. In 2017, the share of employment in co-operative enterprises and social co-operatives (combined) was 12.9% in Emilia-Romagna, a region where co-operatives are known to be an important part of the economy and account for about third of the regional GDP (Duda, 2016^[33]). In the same year, the share of co-operative employment was just slightly lower in the Autonomous Province of Trento (12.5%), an area with a deep-rooted co-operative movement and strong co-operative presence, particularly in Agriculture, Insurance and Financial Activities and Utilities (OECD, 2014^[34]). Umbria follows with 8.6%. On the opposite, the regions reporting the lowest shares of co-operative employment are Aosta Valley (2.9%), Calabria (3.6%), Marche (3.7%) and Abruzzo (4.4%).

¹⁰ A detailed focus on co-operative employment concentration and distributions is driven by two factors. First, it is in line with the emphasis placed by co-operatives on people and labour inclusion. This is particularly true for worker co-operatives and B-type social co-operatives, whose goal is precisely to create employment. Second, co-operatives account for a comparatively large share of employment in Italy, making it a particularly suitable indicator of the size and distribution of Italian co-operatives across regions and industries.

Figure 2.3. The co-operative sector employs between 3% and 13% of all workers across regions

Share of employment in the co-operative sector by region.



Note: Data for 2017. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on ISTAT/ASIA.

The map of co-operative employment concentration by province displayed in Figure 2.4 shows that the share of workers employed in co-operative enterprises is under 8% in most Italian provinces. In three provinces (Vercelli, Reggio Emilia and Bologna), however, this portion exceeds 12%, and in another three provinces (Trento, Ravenna and Forli-Cesena) it is higher than 8%. Looking at social co-operatives, only three provinces exceed 8% (Biella, Vercelli and Carbonia-Iglesias).

Contrary to the pattern shown in Figure 2.2 (higher co-operative concentration in the South), co-operative employment concentration tends to be higher in the North of the country. In fact, Northern regions make up 59% of the total national co-operative employment, almost equally distributed between the North-west (28%) and the North-east (31%), whereas the shares of central and southern Italy are 22% and 19% respectively. This distribution points to the systematic differences in the average size of the co-operatives across regions. Co-operatives in the North are generally larger compared to their southern counterparts. Whereas in the South and the islands the average number of employees does not exceed 10 for CEs, in the North-east the average reaches 37 employees. The average social co-operative is larger than the average co-operative enterprise in all macro regions, reflecting social co-operatives' emphasis on job creation and labour inclusion

Table 2.1. On average, co-operatives tend to be larger in north of Italy

Average number of employees for Co-operative Enterprises and Social Co-operatives by macro region

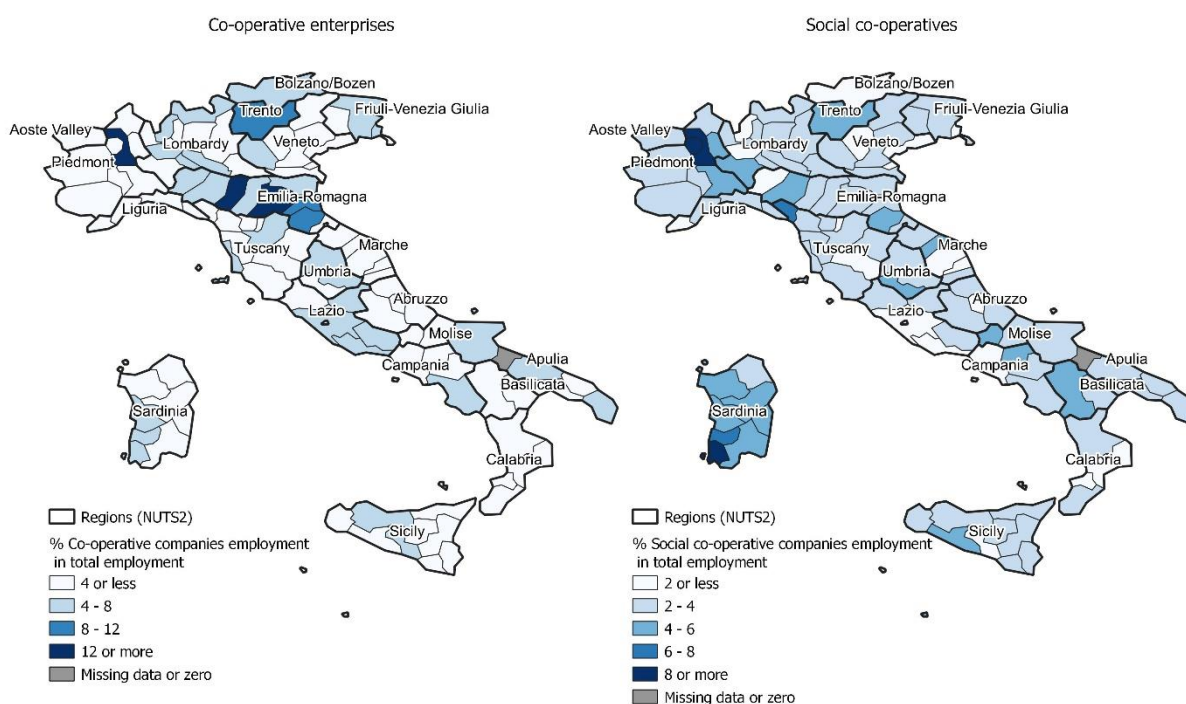
Region	CEs	SCs
North-west	22	42
North-east	37	50
Centre	17	32
South	9	14
Islands	6	14

Note: Data for 2017.

Source: OECD calculations based on ISTAT/ASIA

Figure 2.4. Share of employment in co-operatives tends to be higher in the north

Employment share (%) of co-operative enterprises and social co-operatives in total employment by province.



Note: Data for 2017 or last available year before 2017.

Source: OECD calculations based on ISTAT/ASIA and Eurostat.

2.1.2. Sectoral patterns

Co-operative enterprises operate in a variety of industrial sectors. Vastly dissimilar production technologies inherent in each of these sectors can translate into large variability in co-operative productivity. As a result, regional differences in co-operative performance can stem from both regional industrial composition and the prevalence of co-operatives across different industrial sectors within a region. Box 7 presents more details about the sectoral breakdown used in this report.

Box 7. Sectoral breakdown used in this report

To present a more detailed view of Italian co-operatives' performance, this report disaggregates several economic indicators into 10 industrial sectors. The sectoral breakdown is based on standard NACE or (ISTAT) ATECO definitions. Table 2.2 shows the mapping between sectors and the corresponding NACE/ATECO codes (throughout the report, industrial sectors are usually displayed in alphabetical order).

Table 2.2. Sector-to-NACE code mapping

	NACE/ATECO 2 Digit codes
Agrifood*	(01-03), 10-12
Industry	05-09, 13-39
Construction	41-43
Wholesale and Retail Trade	45-47
Transport	49-53
KIBS (Knowledge-intensive Business Services)**	62-63, 69-73
Other Services to Enterprises***	55-84, excluding KIBS and 64
Education	85
Health and Social Care	86-88
Other Services to Persons****	90-99

Note: * Agrifood includes agriculture and food processing. Businesses in the agricultural sector are generally not covered in enterprise data and are not covered by this report unless otherwise indicated.

** KIBS includes Information Technology and Services, and Research, Accounting and Legal Services.

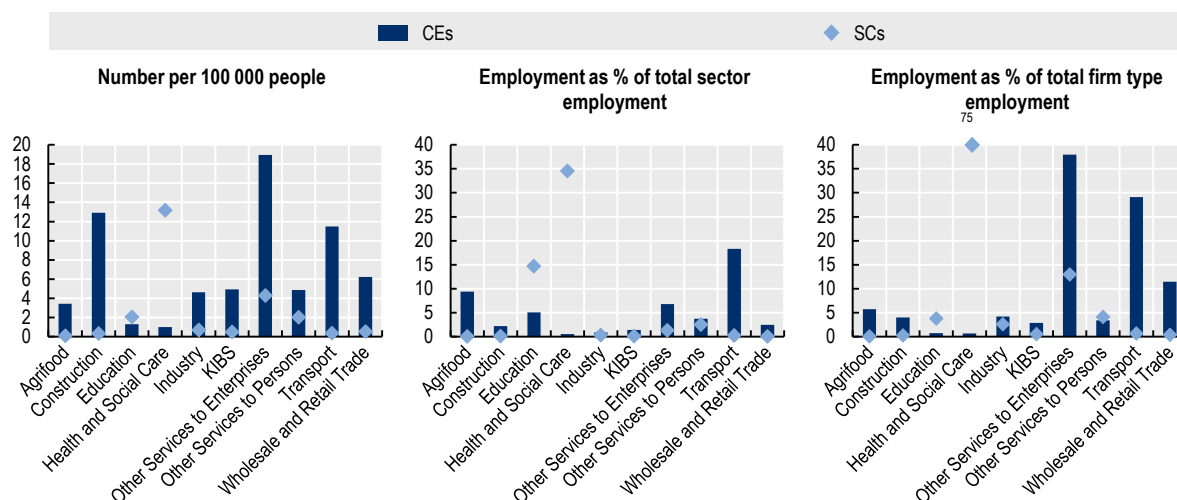
*** The Other Services to Enterprises sector includes Accommodation, Real Estate, Advertisement and other administrative activities not included in KIBS. Finance is excluded as a sector in this report.

**** The Other Services to Persons sector includes Arts, Entertainment and Recreation Activities, Repair Services and other services not covered in other categories.

The prevalence and concentration of co-operative enterprises differ significantly across industries (Figure 2.5). Co-operative enterprises are particularly active in several industrial sectors, such as Other Services to Enterprises, Construction, Transport and, to a lesser degree, Wholesale and Retail Trade. In all these sectors except for Transport, co-operative enterprises tend to be relatively small, as the high number of CEs (the left panel) does not translate into sizable shares of employment (the middle panel). CEs are relatively large in the Agrifood sector. While there are only about three co-operative enterprises per every 100 000 residents in the country, they employ 9% of all workers in the sector in 2017.

Social co-operatives concentrate in other sectors. Their presence is notable in Health and Social Care, and meaningful in Other Services (especially to Enterprises) and Education. Looking at employment, social co-operatives account for an impressive 35% in Health and Social Care, followed by 15% in Education and 3% in Other Services to Persons. Among all co-operative enterprises, employment is concentrated in Other Services to Enterprises (38%) and Transport (29%), while among all social co-operatives 75% of employment is within the Health and Social Care sector (right panel).

Figure 2.5. In terms of employment, CEs concentrate in Transport and Agrifood; SCs in Health and Social Care and Education



Note: Data for 2017.

Source: OECD calculations based on ISTAT/ASIA and Eurostat.

2.1.3. Patterns by size

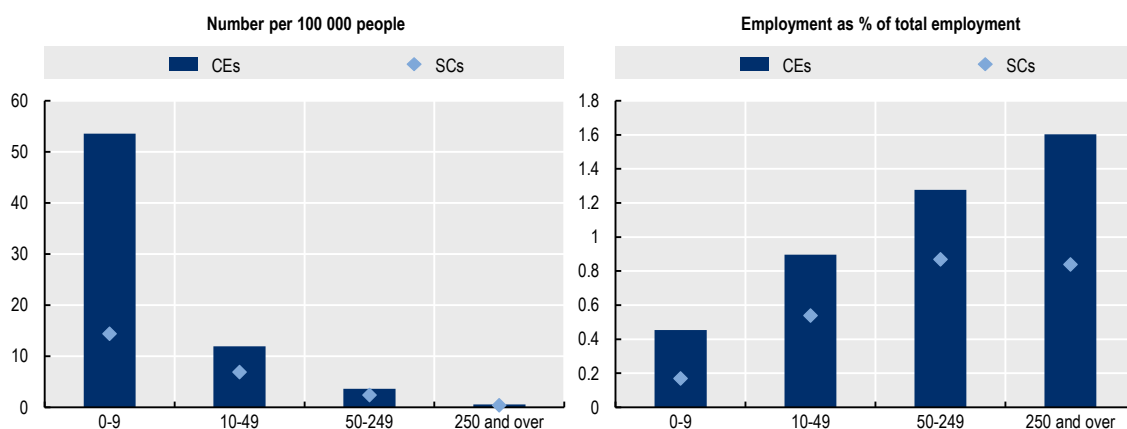
Figure 2.6 shows that the vast majority of CEs and SCs (77% and 60%, respectively) are micro enterprises.¹¹ This translates into 54 micro co-operative enterprises per every 100 000 people and 15 micro social co-operatives per 100 000 people. The prevalence of the next closest category (small co-operatives) is 12 co-operative enterprises and 7 social co-operatives per 100 000 people. Large co-operatives, while quite few (only 0.9 per 100 000 Italians), employ close to 37% of the co-operative employment in the country and account for 2.4% of total national employment (1.6% in co-operative enterprises and 0.8% in social co-operatives).

The share of total employment increases with co-operative size.¹² This contrasts with observed patterns for other Italian firms: micro-firms account for 53% of total employment, small firms for 21% and medium firms for a little below 10% (Muller et al., 2017_[35]). Hence, each larger size class of firms accounts for a smaller share of total employment, whereas for co-operatives we observe the opposite.

¹¹ Enterprise size is divided into four categories: 0-9 employees (micro), 10-49 employees (small), 50-250 employees (medium) and over 250 employees (large), following the classification of EU recommendation 2003/361, available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003H0361&locale=en>.

¹² The sum of the values in the right panel of Figure 2.6 equals 8%, the total share of co-operative employment in the Italian economy in 2017.

Figure 2.6. Micro-sized co-operatives are most numerous, but large ones employ most people overall



Note: Data for 2017

Source: OECD calculations based on ISTAT/ASIA and Eurostat.

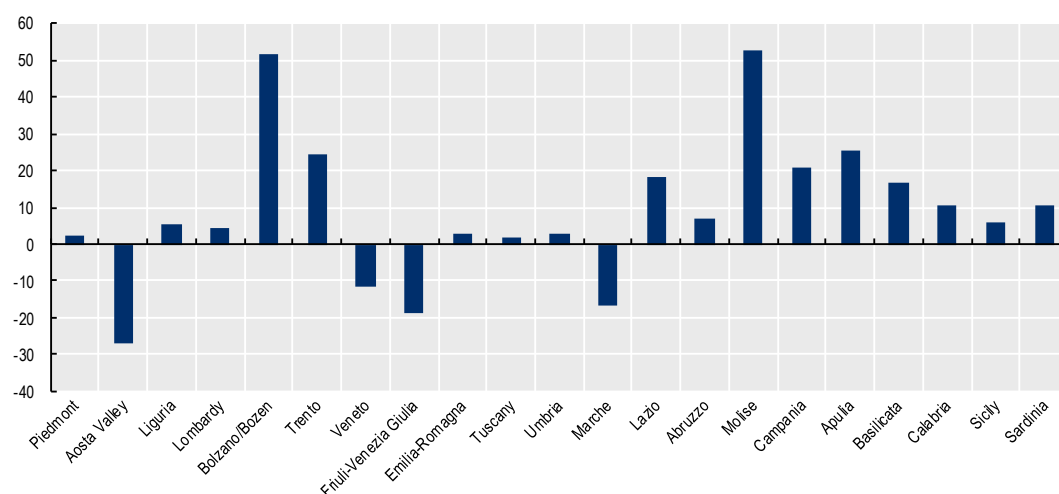
2.2. Co-operative growth trends, 2012-2017

2.2.1. Growth of employment by region

Co-operative employment was generally growing during the 2012-2017 period (Figure 2.7). In 17 regions out of 21, the total number of employees in the co-operative sector was higher in 2017 compared to 2012. Growth in the Autonomous Province of Bolzano/Bozen exceeded 50% and in Molise exceeded 40%. Co-operative employment grew by more than 20% in the Autonomous Province of Trento and in Apulia. In Friuli-Venezia Giulia, co-operative employment contracted by 16%. Other regions where the number of workers in the co-operative sector decreased were Aosta Valley, Veneto and Marche.

Figure 2.7. Co-operative employment grew in 17 regions out of 21 during 2012-2017

Co-operative employment growth between 2012 and 2017, %.



Note: Combined employment in co-operative enterprises and social co-operatives. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

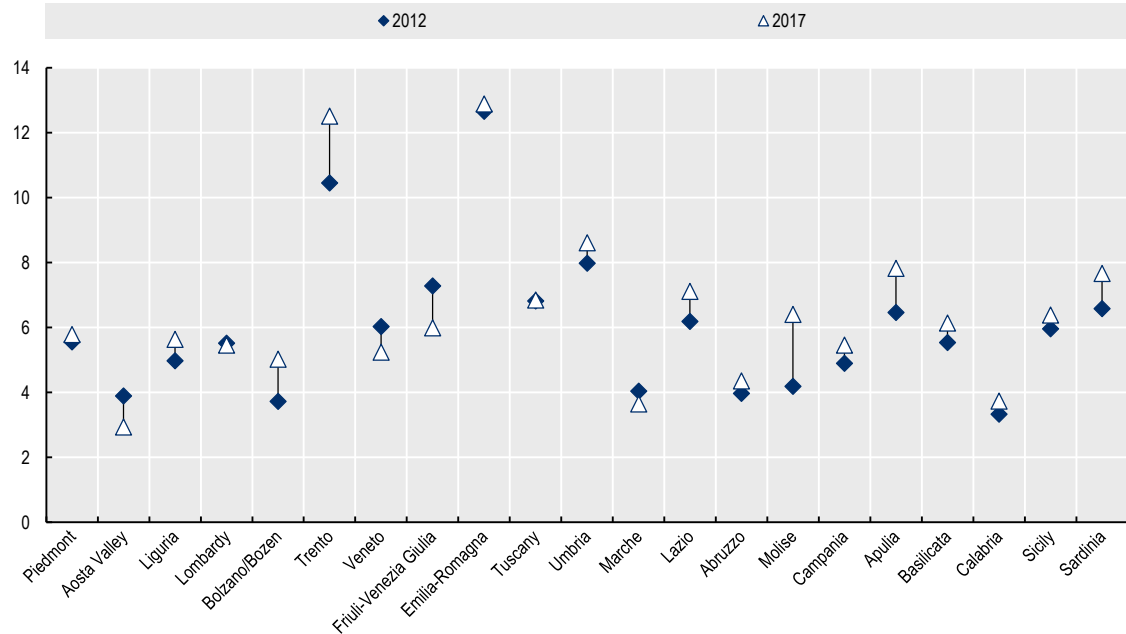
Source: OECD calculations based on ISTAT/ASIA.

The pattern of co-operative employment growth across regions does not necessarily imply an increasing presence of the sector. If total employment grew at a higher rate, the importance of co-operatives in terms of their employment share in regional economies could go down or stay the same.

Generally, the importance of the co-operative sector overall as an employer grew during the 2012-2017 period (Figure 2.8). The share of co-operative employment went up in 16 regions. The largest increase was observed in Molise and the Autonomous Province of Trento, where the share of total employment from co-operatives rose by slightly more than 2 percentage points. In three regions, i.e. Apulia, Bolzano/Bozen and Sardinia, the increase was comprised between 1 and 2 percentage points. In all regions with shrinking shares, the drop was lower than 1 percentage point, except for Friuli-Venezia Giulia where it was slightly higher.

Figure 2.8. Share of co-operative employment increased slightly in most regions during 2012-2017; considerable increase in Molise and Trento

Change in share of co-operative employment, percentage points.



Notes: Employment share of co-operative enterprises and social co-operatives combined. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

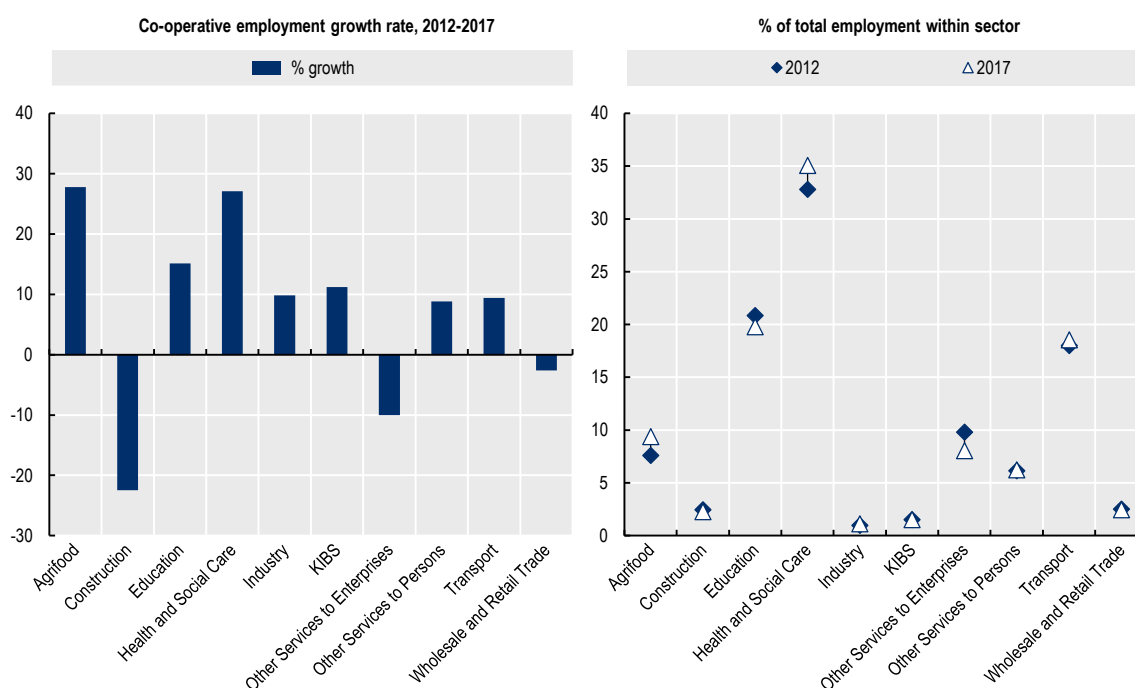
Source: OECD calculations based on ISTAT/ASIA.

2.2.2. Growth of employment by sector

Figure 2.9 presents co-operative employment growth and change in the co-operative employment share by sector between 2012 and 2017. Total employment in co-operatives grew by more than 25% in Agrifood and Health and Social Care. Remarkably, growth exceeded 10% in two knowledge-intensive sectors, Education and KIBS, although the latter from a small baseline. All other expanding sectors reported modest growth of under 10%, while Construction and Other Services to Enterprises decreased.

The share of co-operative employment in total national employment of the corresponding industrial sector stayed approximately the same in six out of ten sectors. The share increased by about 2 percentage points in Health and Social Care and in Agrifood, whereas it decreased by slightly less than 2 percentage points in Other Services to Enterprises and by 1 in Education, despite the total employment growth in the latter sector.

Figure 2.9. Co-operative employment grew in all sectors except for Construction and Other Services; share of employment increased in Health and Social Care and Agrifood



Note: Employment share of co-operative enterprises and social co-operatives combined.

Source: OECD calculations based on ISTAT/ASIA.

2.3. Employment composition of co-operatives

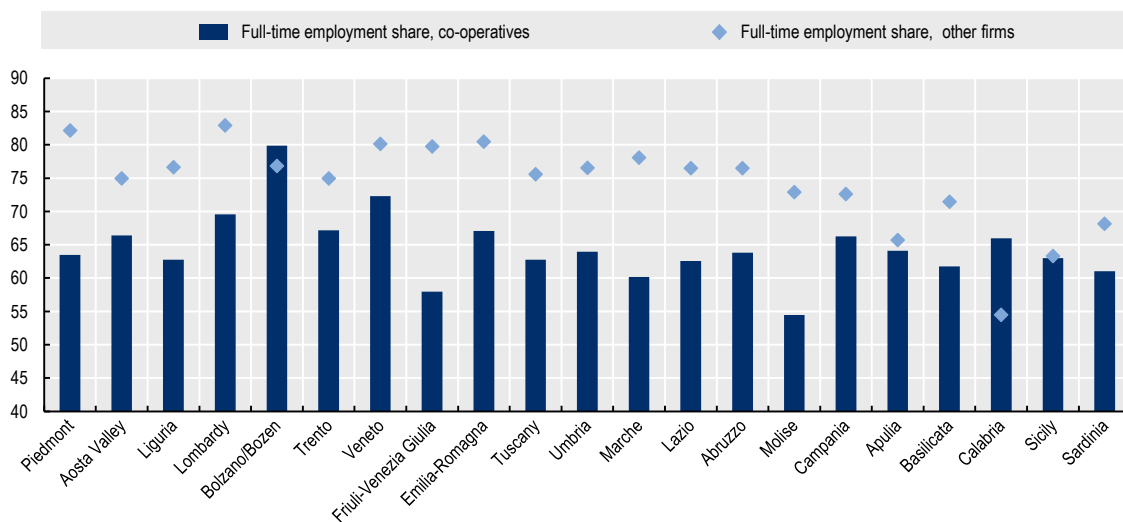
2.3.1. Regional employment composition patterns

Employment composition of co-operatives often differs from that of other businesses along multiple dimensions. Figures below compare shares of full-time, permanent, youth and female employment in co-operatives and other businesses.

Co-operatives rely more on part-time work in most Italian regions (Figure 2.10). Only in two regions, Bolzano/Bozen and Calabria, the share of full-time employment in co-operative exceeds that of other enterprises, potentially signalling differences in the prevalence of co-operative types across regions. Overall, the full-time employment share in co-operatives ranges from 54% in Molise to 80% in Bolzano/Bozen.

Figure 2.10. Co-operatives employ fewer people full time in all regions except for Calabria and Bolzano/Bozen

Share of employees (FTE) on full-time contract as % of total employment in respective groups of enterprises and regions.



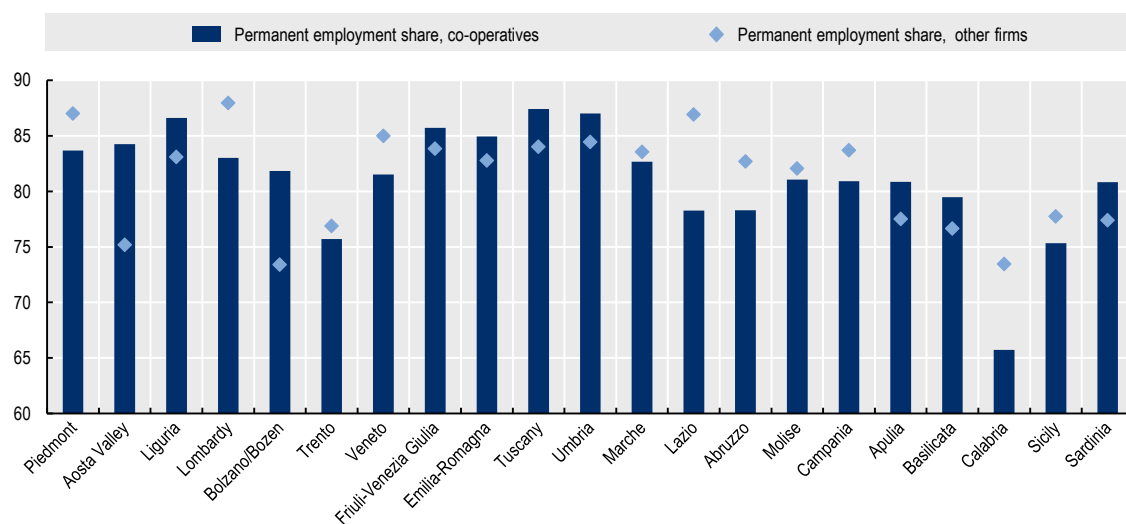
Note: Data for 2017. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on EURICSE tabulations from INPS data.

The reliance of co-operatives on permanent workers differs across regions (Figure 2.11). In ten of them, including the most populous such as Lombardy, Lazio and Campania, the share of permanent employees in co-operatives is lower than in other types of businesses.

Figure 2.11. Co-operatives employ fewer people on a permanent basis in half of the regions, including the most populous

Share of employees (FTE) on permanent contract as % of total employment in respective groups of enterprises and regions.



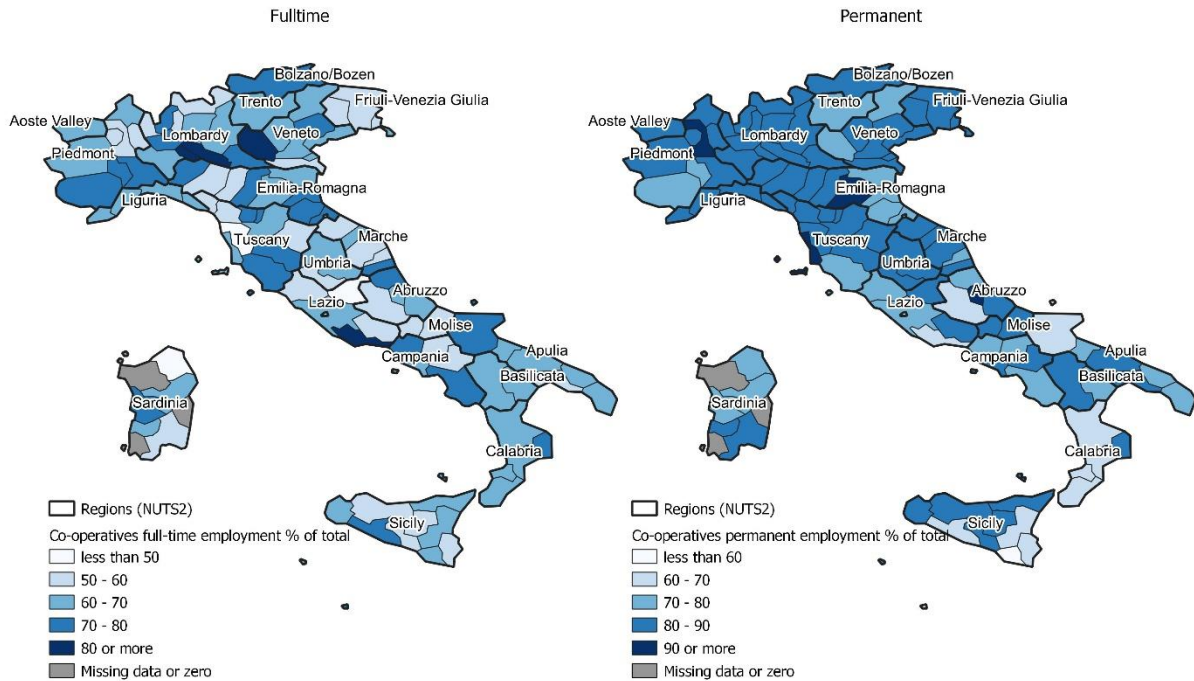
Note: Data for 2017. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on EURICSE tabulations from INPS data.

Differences in shares of full-time and permanent employment across provinces are more pronounced than across regions (Figure 2.12). The share of full-time employment in co-operatives is very province-specific and varies widely even within regions. There is no clear pattern across macro-regions. In contrast, the share of permanent employment in co-operatives tends to be higher in provinces in the North of the country where the average size of co-operative enterprises is also larger.

Figure 2.12. Share of full-time employment in co-operatives is very province-specific; reliance of co-operatives on full-time workers tends to be higher in the north of Italy

Share of employees (FTE) as % of total co-operative employment in a province.



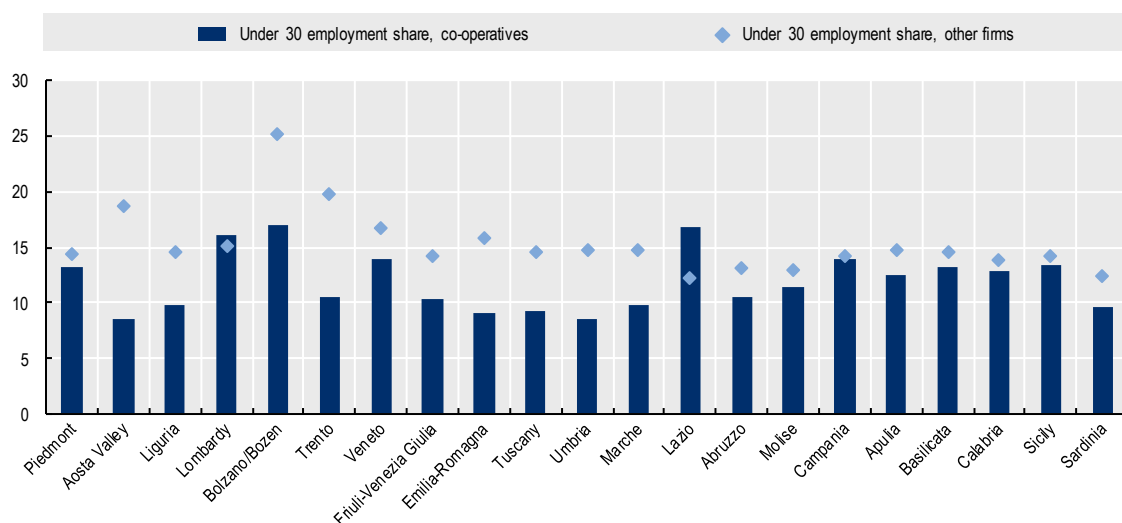
Note: Data for 2017.

Source: Data for 2017. OECD calculations based on EURICSE tabulations from INPS data.

The employment share of young people under 30 ranges from 9% in Aoste Valley and Umbria to 17% in Bolzano/Bozen (Figure 2.13). This represents a lower share relative to the non-co-operative sector in all regions except for Lombardy and Lazio. In Lazio, the share of workers under 30 in co-operatives is 5 percentage points higher than in other types of businesses. In Lombardy, the difference is 1 percentage point.

Figure 2.13. Co-operatives tend to employ fewer people under 30

Share of employees (FTE) under 30 as % of total employment in respective groups of enterprises and regions.



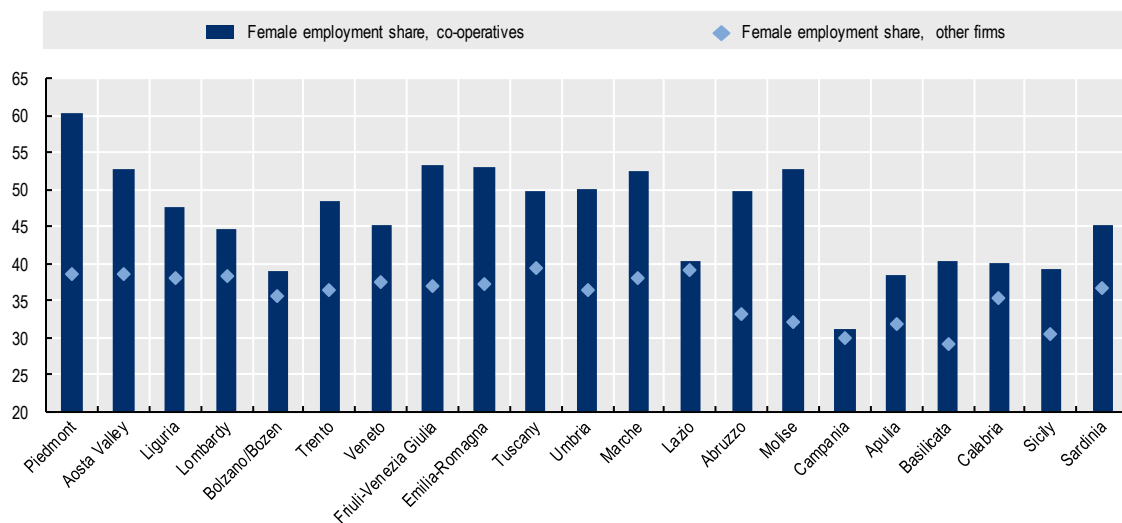
Note: Data for 2017. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on EURICSE tabulations from INPS data.

Co-operatives employ relatively more women in every region compared to non-co-operatives (Figure 2.14), in part reflecting different sectoral distributions. The employment share varies between 31% (Campania) and 60% (Piedmont). These figures are notably higher compared to female employment shares in other businesses, which range from 30% in Campania to 39% in Campania, Lazio and Tuscany. The difference between the share of female workers in co-operatives and other businesses exceeds 20 percentage points in two regions and it reaches 15 percentage points in an additional four.

Figure 2.14. Co-operatives tend to employ more women

Share of female employees (FTE) as % of total employment in respective groups of enterprises and regions.



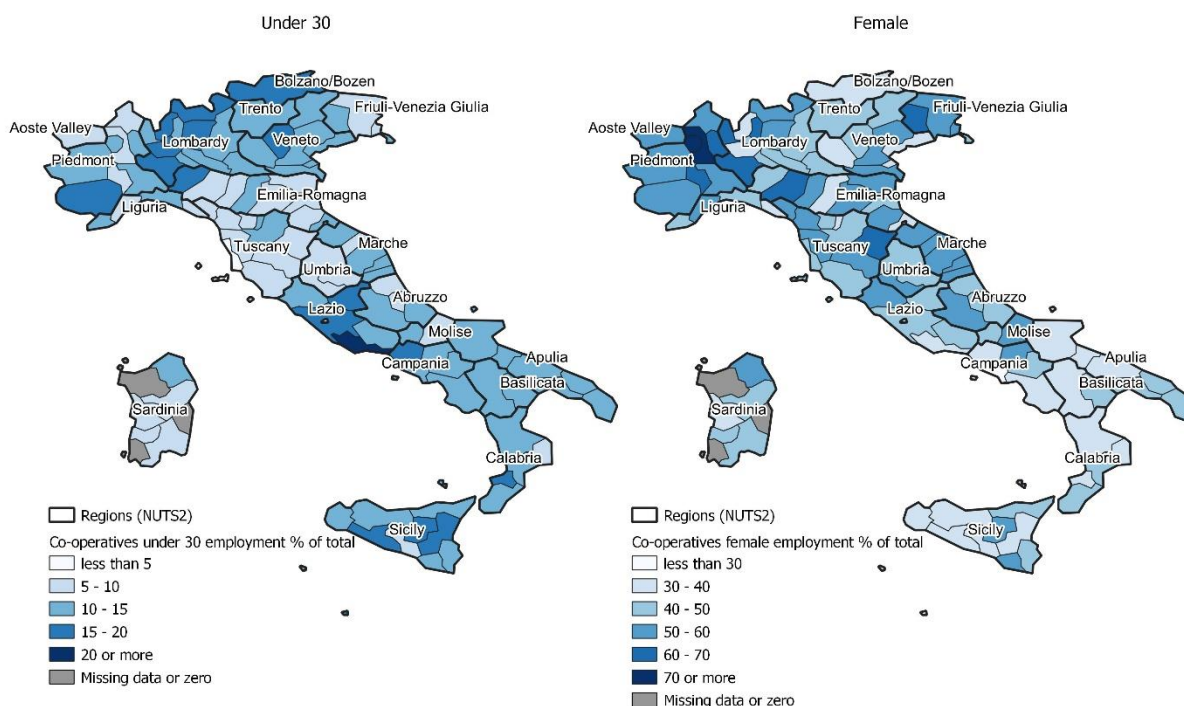
Note: Data for 2017. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on EURICSE tabulations from INPS data.

Figure 2.15 shows shares of employees under 30 (left map) and female employees (right map) as percentage of total co-operative employment by province. Overall, there are sizable variations across provinces within and across regions, which points to a geographically very diverse nature of the co-operative sector in Italy.

Figure 2.15. Share of youth employment in co-operatives is highly province-specific; share of female employees tends to be lower in the south

Share of employees under 30 (FTE) as % of total co-operative employment in a province.



Note: Data for 2017.

Source: OECD calculations based on EURICSE tabulations from INPS data.

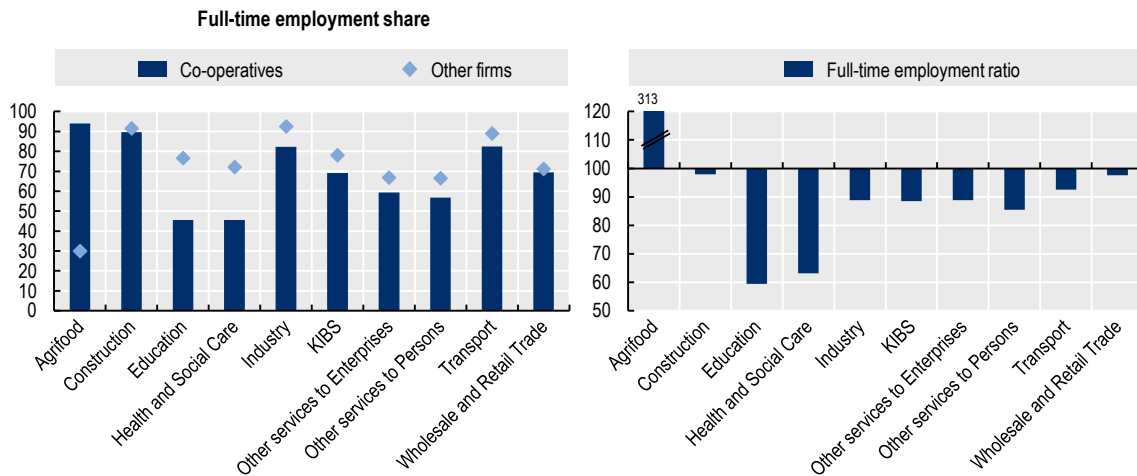
2.3.2. Sectoral employment composition patterns

Employment composition of the co-operatives also varies across sectors, although the patterns compared to other firms as observed in the previous section are generally unchanged. Figures below show the shares of full-time, permanent, youth and female employment in co-operatives and other companies (left panel of each figure) and a ratio of the shares and multiplied by 100 (in co-operatives to that in other enterprises in the right panel of each figure) in order to illustrate the differences. Values below one hundred indicate lower shares in co-operatives compared to other businesses.

The share of full-time employment (Figure 2.16) in co-operatives is markedly higher in Agrifood where 94% of co-operative workers are on full-time contracts compared to only 30% in other types of businesses. In all other industrial sectors, however, co-operatives employ relatively less full-time employees. The difference is particularly large in Education and Health and Social Care where the co-operative full-time employment stands at 46% compared to 77% and 72%, respectively, in non-co-operative enterprises.

Figure 2.16. Share of full-time co-operative employment is lower in all sectors except for Agrifood

Share of full-time employees (FTE) as % of total employment in respective groups of enterprises and sectors (left panel); share of full-time co-operative employment (FTE) divided by share of full-time employment (FTE) in other enterprises multiplied by 100 (right panel).



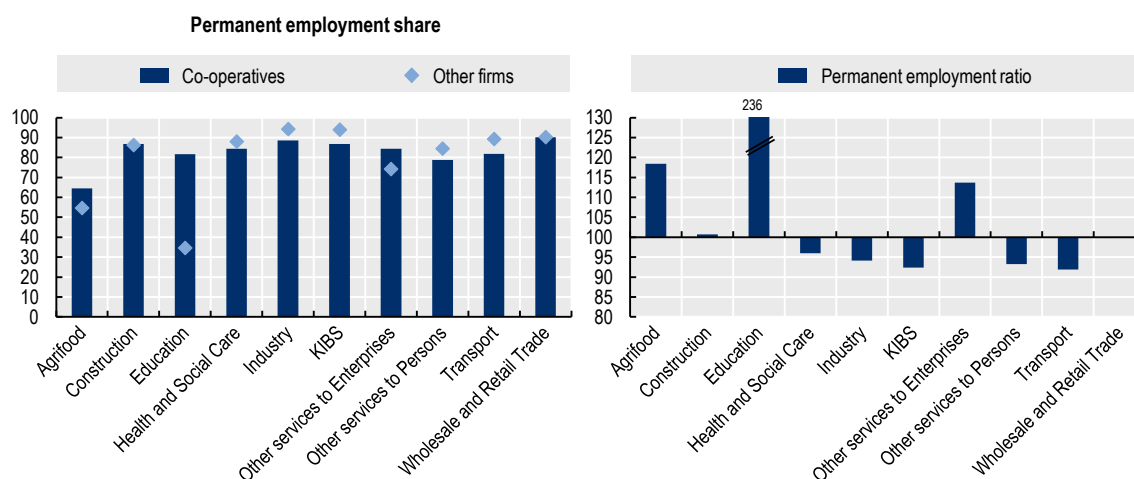
Note: Data for 2017.

Source: EURICSE tabulations from INPS data.

The shares of permanent employment in co-operatives and other companies (Figure 2.17) tend to be extremely close in all industrial sectors except for three. In Agrifood, Education and, to a lesser extent, Other Services to Enterprises, co-operatives employ on average a larger share of permanent workers compared to other types of enterprises.

Figure 2.17. Share of permanent co-operative employment is very close to other firms in all sectors except for Agrifood, Education and Other Services to Enterprises

Share of permanent employees (FTE) as % of total employment in respective groups of enterprises and sectors (left panel); share of permanent co-operative employment (FTE) divided by share of permanent employment (FTE) in other enterprises multiplied by 100 (right panel).



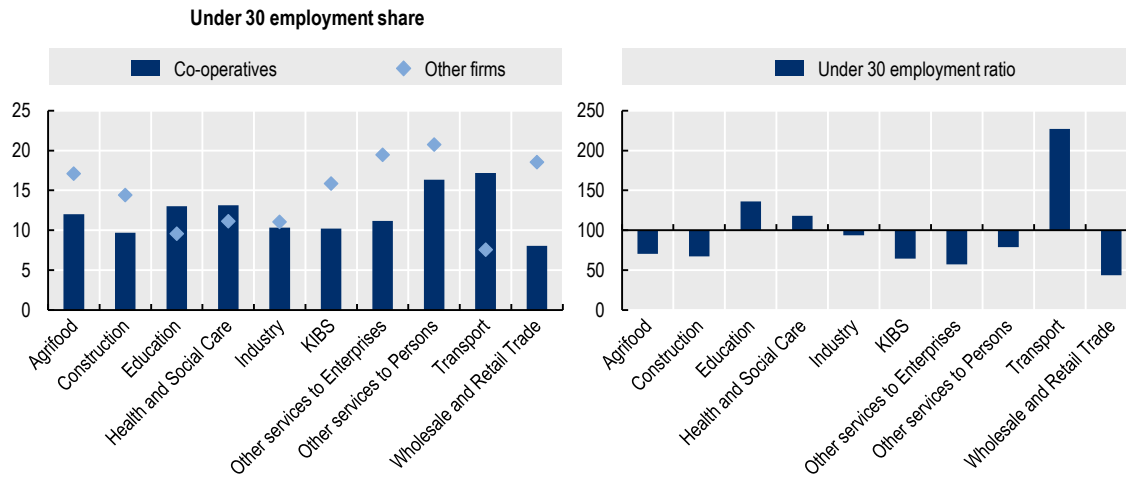
Note: Data for 2017.

Source: EURICSE tabulations from INPS data.

In most industrial sectors, shares of youth (under 30) employment in co-operatives are lower than in other enterprises (Figure 2.18). The difference is particularly large in Wholesale and Retail Trade, Other Services to Enterprises, KIBS, Construction and Agriculture. In three industrial sectors, however, shares of youth employment exceed those in other enterprises. Workers under 30 account for 17% of co-operative employment in Transport (vs. 7% in other enterprises), and for 13% in Health and Social Care and Education (vs. 11% and 10% in other enterprises, respectively).

Figure 2.18. Share of youth employment in co-operatives is lower than in other firms in all sectors except for Education, Health and Social Care and Transport

Share of employees under 30 (FTE) as % of total employment in respective groups of enterprises and sectors (left panel); share of young co-operative employment (FTE) divided by share of youth employment (FTE) in other enterprises multiplied by 100 (right panel).



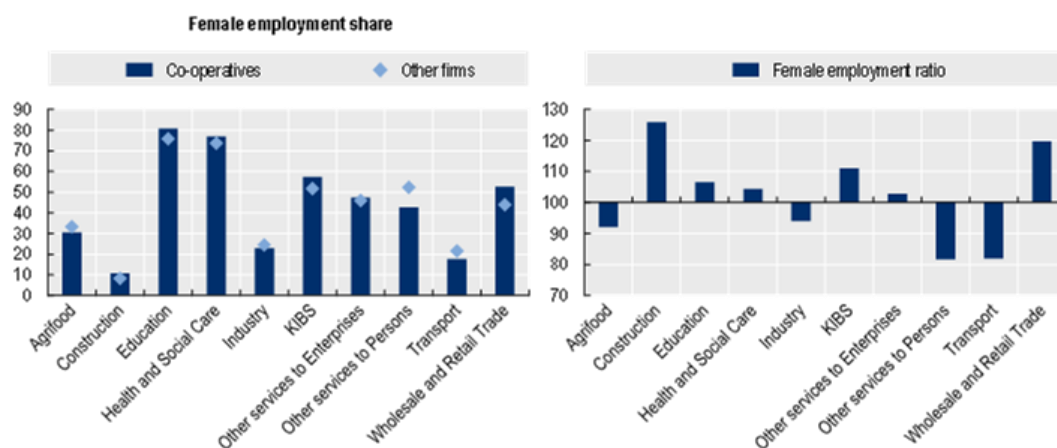
Note: Data for 2017.

Source: EURICSE tabulations from INPS data.

In contrast to the low prevalence of youth co-operative employment, co-operatives employ higher shares of female workers in six out of 10 sectors (Figure 2.19). For example, female employees account for 53% of co-operative employment in Wholesale and Retail Trade (vs. 44% in other enterprises), for 57% in Knowledge-intensive Business Services (vs. 51% in other enterprises) and for 81% in Education (vs. 76% in other enterprises). In four industrial sectors (Agrifood, Industry, Other Services to Persons and Transport), on the other hand, the share of female employees in non-co-operatives exceeds that of co-operatives.

Figure 2.19. Share of female employment in co-operatives is higher than in other firms in all sectors except for Agrifood, Industry, Other Services to Persons and Transport

Share of female employment (FTE) as % of total employment in respective groups of enterprises and sectors (left panel); share of female co-operative employment (FTE) divided by share of female employment (FTE) in other enterprises multiplied by 100 (right panel).



Note: Data for 2017.

Source: EURICSE tabulations from INPS data.

3. Productivity performance of Italian co-operatives

Productivity of co-operatives varies substantially across regions and sectors. Italian co-operatives tend to be less productive compared to other enterprises. In some cases, though, they outperform their non-co-operative counterparts. Co-operatives differ from other firms in their concentration patterns, being more prevalent in regions with weak labour markets and low social capital, whereas their productivity performance follows similar spatial patterns: more innovative and internationally engaged regions, as well as those with higher quality of government, display higher levels of productivity for both co-operatives and other firms. Digitalisation can boost the productivity of co-operatives, but high costs and low absorptive capacity are major obstacles to broader adoption.

Productivity performance of an organisation or enterprise, including co-operatives, is determined by a set of internal and external factors. Internal choices on the goods and services to provide, investments in skills, technology and other production-related considerations shape enterprise productivity in a substantial way. At the same time, economic efficiency is dependent on external tangible (e.g. public infrastructure) and intangible (e.g. trust between economic agents) factors. Additionally, productivity can be related to the overall economy, in that a well-performing economy can provide positive spill-overs to individual enterprises, whereas a dysfunctional one hinders entrepreneurial success.

Productivity performance of co-operatives, however, could be significantly affected by their own two-fold nature, economic and social. Co-operatives do not pursue profit maximisation as their ultimate mission; instead, they often seek to contribute to the availability of public goods, complement public services and advance social goals. Differences in objectives could translate into a distinct pattern of co-operative concentration and productivity performance across space.

Productivity is not readily observed, but must be inferred from aggregated or firm level data on revenues, costs and the use of labour, capital and raw materials. In this chapter we focus on labour productivity (LP) and multi-factor productivity (MFP), calculated from different sources. See Box 8 for further discussion on both measures, with a specific discussion on the caveats that may be appropriate when considering the measurement of productivity for co-operatives. Box 9 provides further methodological details and references on the calculations of the measures.

Section 3.1 provides an extensive overview of productivity indicators, including comparative analysis between co-operatives and other firms across regions, sectors and size classes. In Section 3.2, econometric analysis investigates the spatial dimension of productivity. It assesses which place-specific factors highlighted in the literature as productivity determinants are associated with productivity of individual co-operative and (for the purpose of comparison) non-co-operative enterprises. Finally, the focus shifts to the ways co-operatives engage in innovation and digitalisation, two practices that have been firmly established as central drivers of productivity.

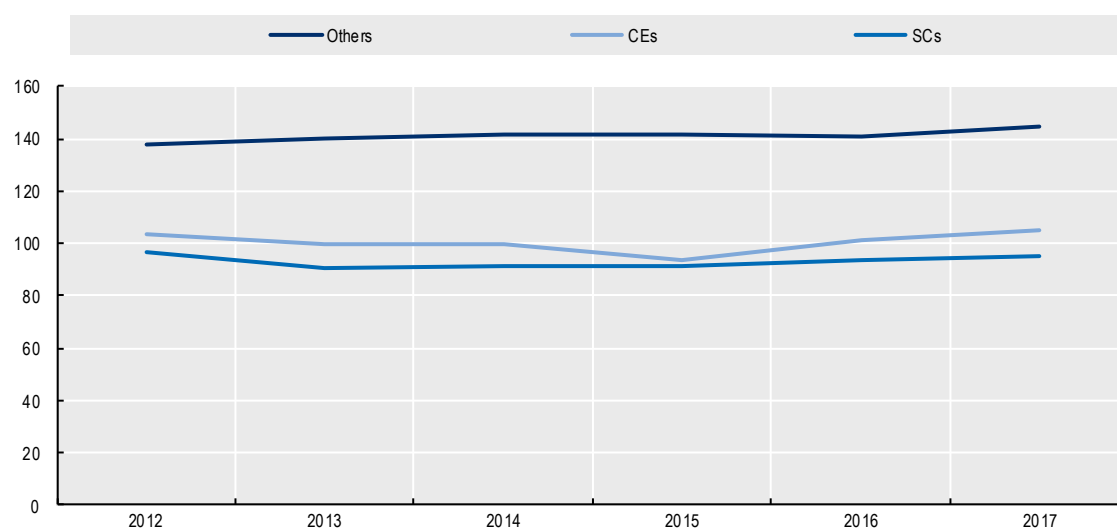
3.1. Productivity indicators

3.1.1. The national view over time

Between 2012 and 2017, the level of productivity in Italian co-operatives stayed approximately the same. Using 100 as the 2017 productivity level of all co-operatives measured by Multi-Factor Productivity in constant 2005 prices, Figure 3.1 shows that the productivity of CEs increased by one percentage point to 105 during the period (with a decline to 94 in 2015). The productivity of SCs went down by two percentage points to 95 during the period, also with a slight decline in the middle. In contrast, productivity of other companies (also benchmarked against the 2017 co-operative MFP level) steadily increased from 137 to 144.

Figure 3.1. Productivity levels stayed generally flat between 2012 and 2017 for co-operatives but it increased slightly for other firms

Index: Multi-Factor Productivity (MFP) of co-operatives (CEs and SCs combined) in 2005 prices, 2017=100.



Note: Firms are weighted by employment.

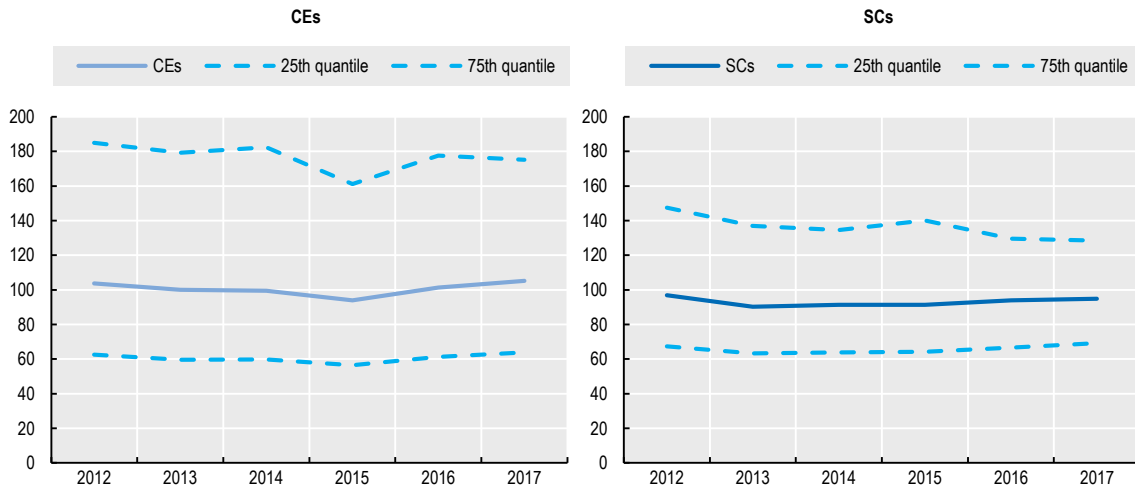
Source: OECD calculations based on Orbis.

The flat averages shown in Figure 3.1, however, hides considerable differences in productivity performance within the co-operative sector (Figure 3.2). While productivity performance (in levels) of the mean co-operative firm and of the bottom 25% (25th quantile) stayed stable over time, productivity of the

top 25% (75th quantile) steadily decreased.¹³ The top 25% of co-operative enterprises can have productivity levels that exceed those of an average firm outside of the co-operative sector during 2012-2017.

Figure 3.2. Top 25% of co-operative enterprises outperform (average) non-co-operatives

Index: Multi-Factor Productivity (MFP) of co-operatives (CEs and SCs combined) in 2005 prices, 2017=100.



Note: Firms are weighted by employment.
Source: OECD calculations based on Orbis.

¹³ The 25th and the 75th quantiles, as well as the mean, are calculated for each year separately. Therefore, the composition of co-operatives for the quantiles can change over time. The narrowing range for SCs over time may indicate a selection effect or relative decrease of productivity among those SCs that tend to be most productive.

Box 8. Labour Productivity and Multi-Factor Productivity as measures of productivity. The problem of underestimation in co-operatives

This report focuses on two productivity measures, Labour Productivity (LP) and Multi-Factor Productivity (MFP).

Labour Productivity (LP) is measured as the total value added of a company divided by the number of full-time equivalent workers. This measure is easy to calculate, as only two indicators of business performance are required. Value added is the difference between the gross value (or sales revenues of a firm) and the costs of intermediate products and material inputs.

However, LP does not account for differences in other production factors or technologies that companies use, summarised by the capital input. **Multi-Factor Productivity (MFP)** aims to overcome this limitation by accounting for multiple production factors.

By accounting for differences in the use of multiple inputs, MFP is better able to account for productivity-related differences in firm production processes. The drawback of this measure is that not all information needed for MFP calculations is readily available. Some of the information, such as the quantity of capital and the relative intensity of capital and labour in production, is estimated (see Box 9). Depending on how close the estimate is to reality and several other factors, there is a possibility of variation in precision of MFP estimates.

Both LP and MFP may somewhat underestimate productivity of co-operatives for several reasons. First, co-operatives are likely to pay a higher share of their revenue to employees, and possibly suppliers too. Following their social mission, various benefits may exist for co-operative employees such as in-work benefits, flexible contracts, and patronage refunds. Suppliers, such as from the agricultural sector, may receive an average price of their production that is above the market average. On the revenue side, again following a social mandate, the price of services may be below what a typical other firm would charge. Each of these considerations will lead, all other things being equal, to lower productivity levels, but productivity growth rates should be, again all other things being equal, unaffected.

Additionally, some firms, including co-operatives, have multiple establishments across the country. The production value of different branches is conventionally assigned to the location of the headquarters, whereas assessing more closely the productivity variation across branches may also be interesting for research purposes. Data limitations often prohibit a consistent analysis of branches within firms. This issue is most likely to play a role for larger firms, which also tend to have higher levels of productivity on average. If one region hosts a disproportionately higher share of headquarters compared to the distribution of production facilities or branches across the country, there would be a bias on the productivity level of such region.

For this reason, the comparison of productivity between co-operatives and other businesses should be taken with caution. Emphasis should be given to the comparison of co-operative productivity across regions (and across industries, although sectoral variations are not the focus of this report).

Box 9. Data, productivity calculation and adjustments

Multi-Factor Productivity

The OECD relies on Orbis to derive its harmonised OECD-Orbis database of firm-level Multi-Factor Productivity, inputs and outputs (Gal, 2013^[36]), which is used in many OECD publications (OECD, 2015^[37]; Andrews, Criscuolo and Gal, 2015^[38]; Andrews, Criscuolo and Gal, 2016^[39]). The role of capital is accounted for through the firms reported value of EBITDA (Earnings before interest, taxes, depreciation, and amortisation). This report uses the OECD-Orbis database (unless otherwise indicated) to derive aggregate productivity estimates of co-operatives and of other firms for benchmarking. In the regression analysis, firm-level MFP is used as a dependent variable.

For this report, the firm-level MFP estimates are adjusted to better reflect the use of labour. As discussed in Section 2.3, co-operatives are more likely to use part-time contracts compared to other firms. In the Orbis dataset, employees are counted based on heads, not on a full-time equivalent basis. This leads to underestimation of (downward bias in) MFP in the Orbis database, because a given level of output appears as being produced by a larger number of workers compared to an otherwise similar non-co-operative firm. Therefore, MFP estimates for both co-operative and non-co-operative firms have been adjusted by a factor that is proportional to the share of full-time employment measured at the level of sector-province-company type.

Observations for non-co-operative firms that are larger than the largest co-operative are excluded from the dataset used for this report. Such exclusion increases the comparability between the co-operative sector and other firms, given a well-documented and strong link between company size and productivity.

Finally, regional and sectoral averages of firm-level productivity in this report are weighted by the size of labour of firms. This increases the importance of larger firms in a particular sector or region.

Labour Productivity

LP estimates have been calculated as the ratio between the added value (from the AIDA dataset) and the labour input understood as full-time equivalent (FTE) workers. FTEs were calculated by Euricse on the basis of data provided by the National Institute of Social Security (INPS) as the ratio between the number of paid days in the year and the number of payable days (312). The ratio has been adjusted to consider part-time work (using the ratio between useful weeks* and paid weeks). Moreover, if the co-operative only employs "*parasubordinati*" workers (i.e. consultants), the number of FTEs was obtained by comparing the number of paid days to the days of the year (365) (Borzaga, 2017^[40]).

Benchmarks

This report uses MFP and LP indexes (productivity performance benchmarked against a certain value, for example, average MFP and LP, respectively, of all co-operatives) as a measure of productivity. The index is calculated based on the corresponding indicator (MFP or LP) in 2005 constant euros adjusted to be internationally comparable by applying country and sector price index from the OECD STAN database (Gal, 2013^[36]). The choice of the reference year generally has no or very little bearing for the relative differences in productivity between sectors and Italian regions/provinces. However, it does assume that price movements are shared within sectors across all regions. Different forms of adjustments may slightly change the value numbers and consequently might slightly affect the order of sectors and regions when ranked by productivity values.

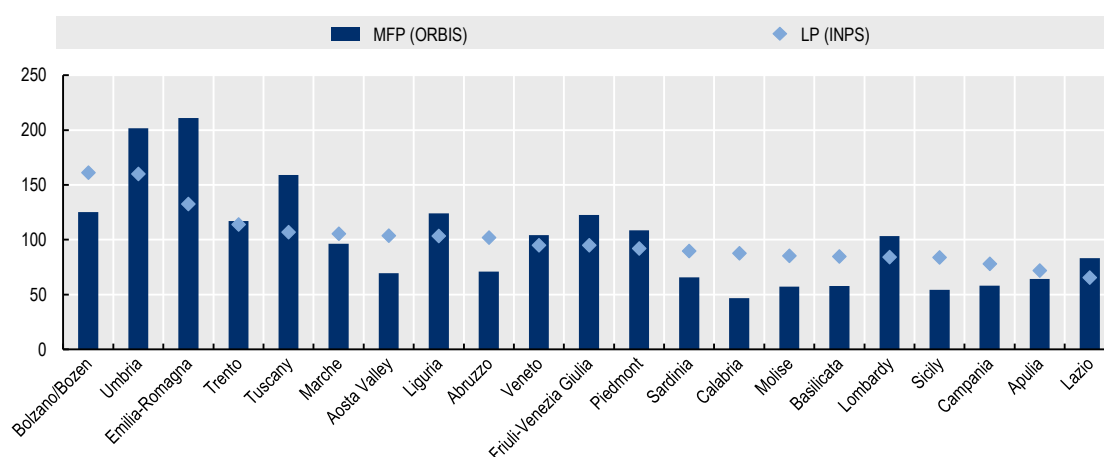
Note:* By "useful weeks", INPS indicates the total number of hours paid in the month divided by the weekly contract time of the concerned full-time worker.

3.1.2. Regional perspective

There are large disparities in productivity performance across Italian regions (Figure 3.3). Both productivity measures (MFP and LP) show considerable regional variation, although the differences are larger for Multi-Factor Productivity. The MFP index (2017 MFP for all co-operatives equals 100) ranges from 47 in Calabria to 211 in Emilia-Romagna. The LP index (2017 LP for all co-operatives equals 100) ranges from 65 in Lazio to 161 in Bolzano/Bozen.

Figure 3.3. Productivity of co-operatives varies widely across regions

Index: The corresponding measure (MFP or LP) for co-operatives (CEs and SCs combined) in 2005 constant prices, 2017=100.



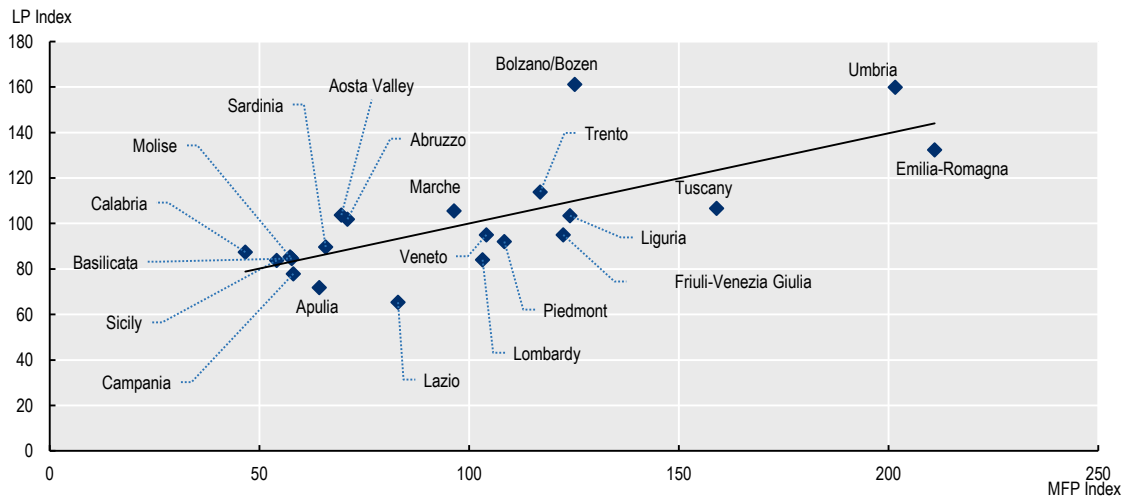
Notes: Data for 2017. MFP based on Orbis, LP based on INPS. Regions are ordered by the value of LP index. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD and EURICSE calculations based on Orbis and INPS.

The two measures of productivity in Italian regions, MFP and LP, show a positive correlation, which means that regions with higher values of Multi-Factor Productivity tend to display higher Labour Productivity too. This is confirmed in Figure 3.4, where all observations of regions are located very close to the upward sloping line except for two. Bolzano/Bozen demonstrates considerably higher LP than it would be expected from its MFP performance, while Lazio displays somewhat lower LP than is expected from its MFP.

Figure 3.4. MFP and LP indexes are highly correlated (correlation coefficient = 0.75)

Index: The corresponding measure (MFP or LP) for co-operatives (CEs and SCs combined) in 2005 constant prices, 2017=100.



Note: Data for 2017. MFP based on Orbis, LP based on INPS. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD and EURICSE calculations based on Orbis and INPS.

Figure 3.5 focuses on the MFP index only (as a more comprehensive productivity measure) and compares productivity performance of CEs, SCs and all other businesses across regions. In most Italian regions, companies outside of the co-operative sector tend to outperform co-operatives in terms of productivity. This can result from a multitude of factors, from different business goals and organisation of activities to undercapitalisation. Under some circumstances, however, co-operatives can be at least as productive as other firms. For example, when workers participate in management, worker co-operatives tend to be more productive than their non-co-operative counterparts in many countries (Fakhfakh, Perotin and Gago, 2012^[41]; Bailly, Chapelle and Prouteau, 2017^[42]; Logue and Yates, 2006^[43]). Several case studies of individual industrial sectors in different countries also point to the possibility of higher productivity in co-operatives compared to other firms (Barros and Santos, 2007^[44]; Grunberg, Everard and O'Toole, 1984^[45]; Becchetti, Castriota and Tortia, 2013^[46]; George, Fontanari and Tortia, 2020^[47]).

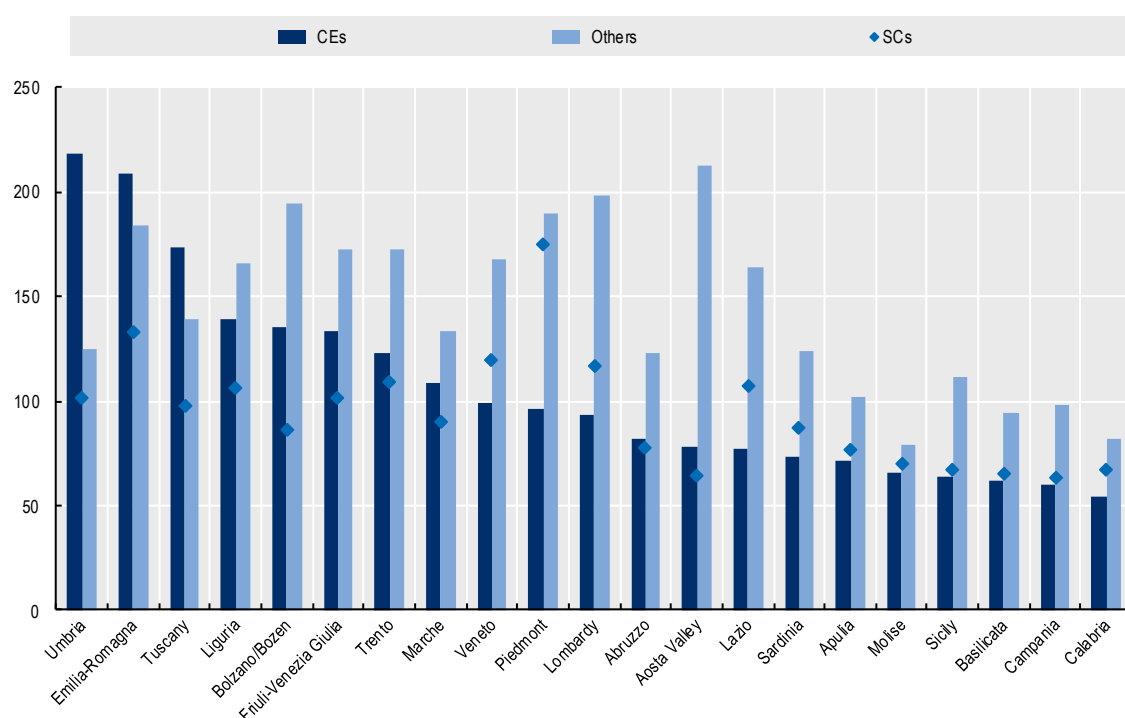
In three Italian regions, Umbria, Emilia Romagna and Tuscany, co-operative enterprises are on average more productive than non-co-operatives when indexes of simple weighted averages¹⁴ of productivity performance are compared. These averages do not account for potential differences in the average values of productivity across regions that stem from varying concentration of co-operatives and other enterprises in specific industries or sectors, which can display higher or lower productivity due to technological peculiarities, or in specific size classes given that larger companies tend to be more productive. Regional productivity averages that account for the potential effects of sectoral and size composition are discussed below.

¹⁴ The productivity index is calculated by weighting productivity of each enterprise by the share of its employment and then dividing by the average value of MFP for all co-operatives in 2005 constant euros and multiplying by 100.

Another important observation from Figure 3.5 is that when comparing simple weighted averages, social co-operatives are relatively more productive than co-operative enterprises in 11 Italian regions, including some of Italy's largest, such as Lombardy, Piedmont and Lazio.

Figure 3.5. Productivity of CEs, SCs and other firms varies widely across regions

Index: MFP for co-operatives (CEs and SCs combined) in 2005 constant prices, 2017=100.



Note: Data for 2017. Regions are ordered by the value of the MFP index in co-operative enterprises. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on Orbis

As hinted above, part of these regional differences may be due to variations in the sectoral specialisation of co-operatives and social co-operatives across regions. For instance, certain sectors that tend to have higher levels of productivity may be spatially concentrated. This would imply that a relatively high level of productivity for such a region is (partially) explained by the spatial distribution of sectors, and not by specific circumstances proper to the region. Similarly, a variation of the average size of co-operatives and other firms across regions may partly explain the regional comparison.

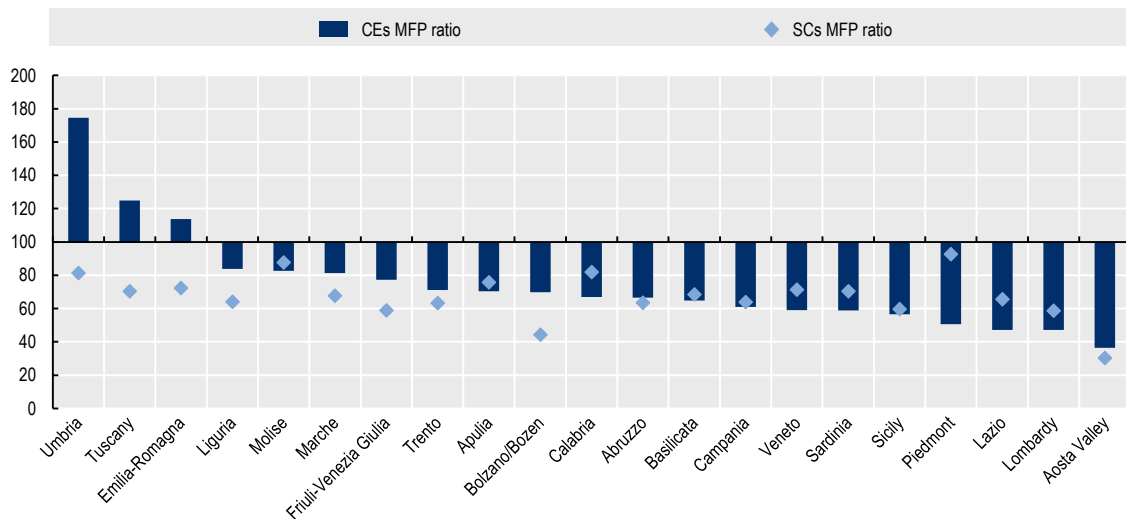
Annex B explores this issue further. In results presented there (Figure B.1), SCs outperform CEs in seven regions, and the difference with CEs is substantially smaller when factors related to sector and size are accounted for. However, the relative ranking of the regions and the comparison between CEs, SCs and other firms remains largely unchanged. Therefore, a higher productivity performance of co-operative enterprises in Umbria, Emilia-Romagna and Tuscany displayed in Figure 3.5 is the result of CE concentration in more productive sectors and/or size classes.

Productivity performance of co-operative enterprises and social co-operatives relative to other businesses is shown in Figure 3.6. In three regions (Liguria, Molise, Marche), CEs' productivity ranges between 80% and 90% of their counterparts outside of the co-operative sector. In all other regions, relative productivity of CEs is under 80%. Social co-operatives tend to be relatively less productive. Only in Piedmont, their

productivity stands above 90% of other firms; in three other regions (Umbria, Calabria, Molise), it is in the 80-90% range and is below 80% in all the rest. Aosta Valley shows the lowest relative productivity of both CEs and SCs as a result of very strong productivity performance by the non-co-operative businesses.

Figure 3.6. In three regions, CEs are more productive than non-co-operatives

Ratio of MFP in co-operatives (CEs and SCs separately) to MFP in other businesses multiplied by 100.



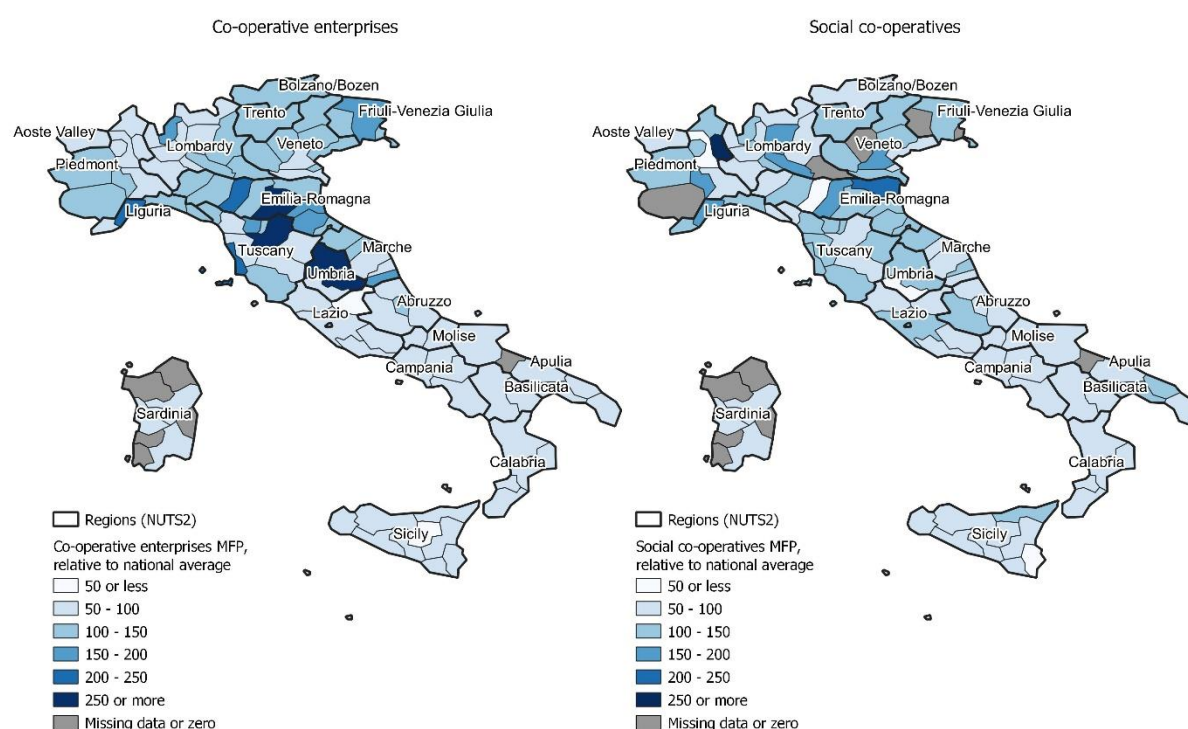
Note: Data for 2017. Regions are ordered by the index of MFP in co-operative enterprises. Values for the Autonomous Provinces of Trento and Bolzano/Bozen are reported separately following their unique NUTS2 (region-level) codes.

Source: OECD calculations based on Orbis.

Relative productivity of CEs and SCs by province is shown in Figure 3.7. As with other indicators, the maps reveal considerable variation both across and within Italian regions. Productivity indexes for both groups of co-operatives range from under 50% to over 250%. Co-operative enterprises tend to be more productive in provinces located in the centre and the north-east of Italy, whereas more productive social co-operatives are predominantly found in the north of the country and in coastal provinces in the centre. In several provinces, SCs are more productive compared to other businesses attesting to the importance of a detailed geographical focus.

Figure 3.7. Most productive co-operatives concentrate in provinces of the north and centre

Index: MFP for co-operatives (CEs and SCs combined) in 2005 constant prices, 2017=100.



Note: Data for 2017.

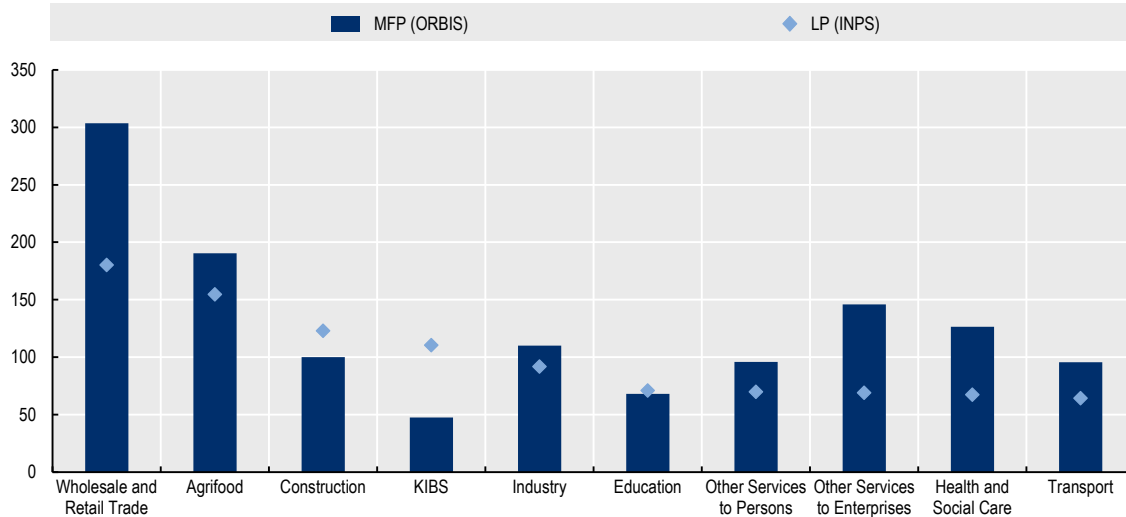
Source: OECD calculations, based on Orbis.

3.1.3. Sectoral perspective

Productivity of co-operatives measured by both MFP and LP (simple weighted averages) also varies widely across industrial sectors (Figure 3.8). In numbers that do not control for company size, and regional distribution, co-operatives are most productive in Wholesale and Retail Trade, where their average productivity performance in 2017 reached 304% (if measured by MFP) and 180% (if measured by LP) of the corresponding measure of average productivity in other businesses in this industrial sector. Multi-Factor Productivity of co-operatives is the lowest in Knowledge-intensive Business Services (48% of average co-operative MFP) followed by Education (68%). Labour Productivity, in contrast, is the lowest in Transport (64% of average LP) and Health and Social Care (67%).

Figure 3.8. Co-operative enterprises productivity varies considerably across sectors

Index: The corresponding measure (MFP or LP) for co-operatives (CEs and SCs combined) in 2005 constant prices, 2017=100.



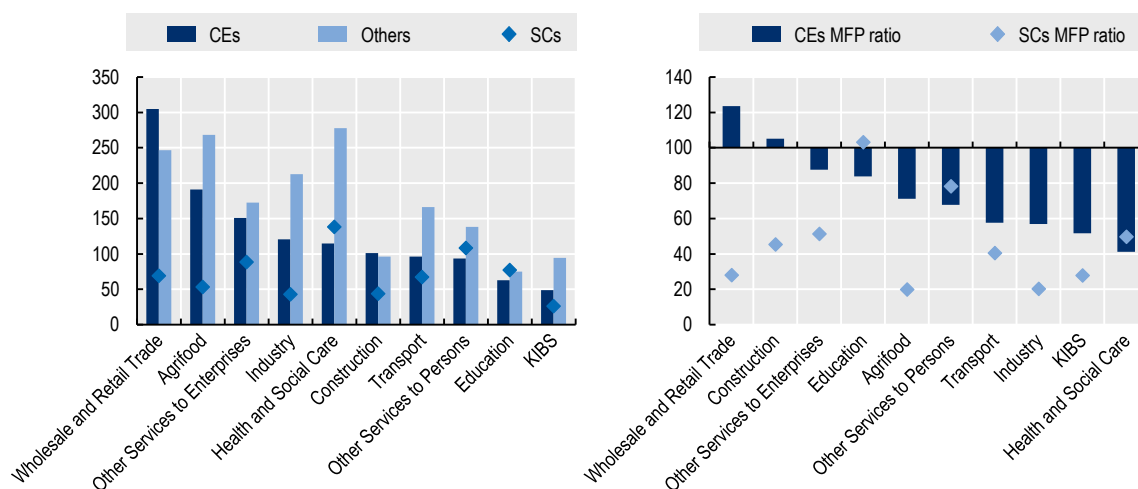
Note: Data for 2017. MFP based on Orbis, LP based on INPS. Sectors are ordered by the value of LP index.
Source: OECD and EURICSE calculations based on Orbis and INPS.

Figure 3.9 shows a more detailed picture of productivity performance (MFP measure, simple weighted averages) among co-operative enterprises, social co-operatives and other companies in 2017. Co-operative enterprises are most productive in Wholesale and Retail Trade, where their productivity exceeds that of any group of companies in any industrial sector. Another sector where productivity of CEs exceeds other firms' is Construction, although the difference is quite small. Social co-operatives appear slightly more productive than other companies in Education and more productive than co-operative enterprises in Health and Social Care, Other Services to Persons and Education. In all other sectors, SCs are less productive than CEs and other companies.

Analogously to the results of productivity by region, the results by sector may partly conflate a regional concentration with a sectoral averages. Figure B.2 presents average productivity by sector and type of enterprise (CEs, SCs, Other) after factoring out the effects of size class and region. Once these factors are accounted for, the productivity performance of CEs is lower compared to other firms in all sectors, including Wholesale and Retail Trade. This change likely results from the size effects. The prevalence of larger co-operative chains in Wholesale and Retail Trade increases their average productivity, since larger companies tend to be more productive, while the average productivity of other firms is likely to be lowered by the presence of many small retail stores.

Figure 3.9. CEs outperform non-co-operatives in Trade and Construction; SCs outperform non-co-operatives in Education

Index: MFP for co-operatives (CEs and SCs combined) in 2005 constant prices, 2017=100 (left panel); ratio of average productivity in co-operatives (CEs and SCs separately) to average productivity in non-co-operatives multiplied by 100 (right panel).



Notes: Data for 2017. Industrial sectors are ordered by the value of the MFP index (left panel) and the MFP ratio (right panel) for co-operative enterprises.

Source: OECD calculations based on Orbis.

3.1.4. Productivity and firm size

Enterprise size and productivity are positively correlated. This connection has been documented for non-co-operative enterprises in a variety of sectoral and national settings (Ahn, 2001^[48]; OECD, 2001a, pp. 209-223^[49]). Highly productive firms tend to grow, and hence, larger companies also tend to be more productive on average (Marchese et al., 2019^[50]).

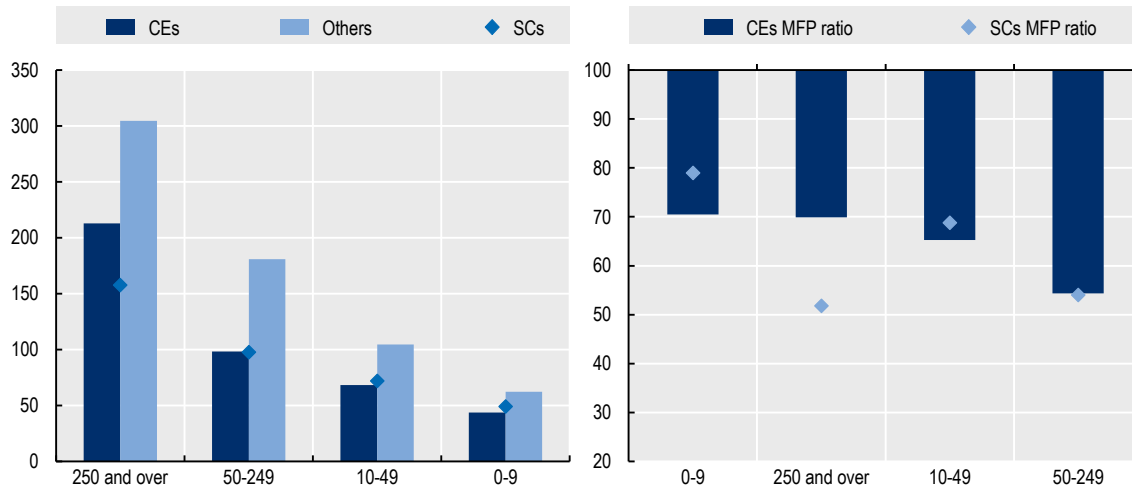
Figure 3.10 reveals that the same association is true for both co-operative enterprises and social co-operatives. The difference between productivity levels (measured by MFP¹⁵ simple weighted averages) of CEs and SCs also follows the same pattern. It is the largest for the largest enterprises and the smallest for the smallest ones. These results stay practically the same when the effects of an industrial sector and of a region are factored out (see Figure B.2 in the appendix).

Compared to businesses outside of the co-operative sector, co-operatives underperform in terms of productivity across all size classes. The difference for SCs follows the pattern of relatively better performance with progressively smaller size, which is driven mostly by lower productivity of the non-co-operative enterprises of smaller sizes. Whereas the largest SCs performed at only 52% of productivity level of their counterparts outside of the co-operative sector in 2017, the smallest ones were at the 79% mark. The smallest of the CEs were also the least underperforming, with productivity level in 2017 at 71% of non-co-operative businesses of this size. Medium co-operative enterprises, conversely, were underperforming the most at 54% in 2017.

¹⁵ Measures of Labour Productivity are not available by co-operative size.

Figure 3.10. Larger co-operatives are more productive; the difference in productivity with non-co-operative businesses is the smallest for micro-enterprises

Index: MFP for co-operatives (CEs and SCs combined) in 2005 constant prices, 2017=100 (left panel); ratio of average productivity in co-operatives (CEs and SCs separately) to average productivity in non-co-operatives multiplied by 100 (right panel).



Note: Data for 2017. Size groups are ordered by the value of the MFP index in co-operative enterprises.
Source: OECD calculations based on Orbis.

3.2. Understanding productivity performance of co-operatives

This section is devoted to a better understanding of co-operative productivity performance. First, it seeks to investigate the location patterns of co-operatives at the regional level. Given their dual social and economic mission, co-operatives are likely to locate in places where their contribution to social welfare is more acutely needed. Even if co-operatives tend to be less productive, as appears to be the case in many regions and sectors (Sections 3.1.2 and 3.1.3), they still provide an important opportunity for employment and, indeed, social development. Next, the focus shifts to individual enterprises (all firms contained in the Orbis data set). A multiple regression analysis is used to better understand which regional characteristics are linked to differences in productivity performance of co-operatives in Italy. The analysis is also conducted for other firms to allow for comparison. The last subsection moves beyond regional factors as productivity explanatory variables. Using survey data, it considers individual co-operatives and their innovative practices and digitalisation during and before the COVID-19 pandemic. The analysis provides further insights on the importance of technology adoption for co-operatives productivity performance.

3.2.1. Regional concentration: are co-operatives different?

Given a unique mission of co-operatives at the intersection of social and economic activity and their often different mode of operation compared to other firms, there is a need for better understanding how different co-operatives are in terms of their location decisions, if at all. Co-operatives may be more prevalent in less prosperous communities and parts of the country as a response to the unfulfilled or partially fulfilled needs of the population for specific goods and services.

This subsection explores differences in patterns of concentration as measured by the number of establishments per capita and labour share. It tests whether these two concentration indicators are linked

to different sets of regional characteristics for co-operative enterprises, social co-operatives and other companies. The analysis allows detecting the patterns of concentration as it relates to several regional factors. The list of the factors is neither prescriptive nor exhaustive. Regional characteristics were selected for the reasons of their plausible link to one of the two components of the co-operative dual mission (social and economic) and data availability. Since an independent analysis is performed for each of them, the results do not depend on the specific selection.

Three major groups of regional factors, both social and economic, are considered. The first one relates to trust and social capital in Italian regions. The second group of factors focuses on labour markets and labour force. The characteristics considered include size of the region (total employment size), the level of hardship (e.g. youth unemployment, long-term unemployment) and others. Finally, industrial structure and business dynamism represent the third group of factors. Individual regional factors considered within this group include business birth rate, the share of employment in selected sectors and others.

Table 3.1 lists all variables by group, with brief descriptions and data sources. Box 10 offers a summary of academic literature (focusing mostly on the most seminal contributions) that relates the three groups to regional economic outcomes.¹⁶

Table 3.1. Regional factors tested for association with concentration patterns

Group	Variable	Description	Source
Social capital and safety	Trust	The measure is a standardised sum of responses to four questions (whether a wallet is expected to be returned by a stranger, a police officer and a neighbour, respectively, and whether people in general can be trusted)	ISTAT survey "Aspects of Daily Life"
	Political and social engagement	The measure is a standardised sum of two aspects: (1) frequency of citizens informing themselves about politics (more often results in a higher score) and (2) the sources of their information (the more sources the higher the score)	
Labour markets and labour force	Regional employment	Log of total regional employment	OECD.Stat
	Long-term unemployment	Share of labour force in long-term unemployment	
	Youth unemployment	Share of unemployed 15-24 year-olds in 15-24 year old labour force	
	NEET	Share of 18-24 year-olds not in education and unemployed or inactive	
Industrial structure and business dynamism	Business birth rate	New businesses as share of all establishments, same sector and same size class	OECD.Stat
	3-year survival rate	Share of all establishments born three years ago that have survived, same sector and same size class	
	Employment in agriculture, forestry and fishing	Share of total employment in agriculture, forestry and fishing (ISIC rev. 4 sector A)	
	Employment in industry	Share of total employment in mining and quarrying, manufacturing, electricity, gas and water supply, waste management (ISIC rev. 4 sector B, C, D, E)	
	Employment in ICT	Share of total employment in information and communication (ISIC rev. 4 sector J)	
	Employment in public administration, education and health	Share of total employment in public administration and defence, compulsory social security, education, human health and social work activities (ISIC rev. 4 sectors P, O, Q)	

Note: Data for 2016 or the last year if 2016 is not available.

¹⁶ While alternative variables for the same broad categories may be considered, these variables were chosen based on their representativeness and general availability. Note that main economic measures of broad sectoral and labour composition tend to be positively correlated.

Box 10. Brief overview of academic literature related to productivity and social capital, labour markets and industrial structure

Social capital

The academic interest in social capital and its regional variations as well as its connection with economic outcomes originated in research looking at the differences between the Italian South and the North (Putnam, Leonardi and Nanetti, 1993^[51]). Since then, social capital was linked to many regional and local economic and social processes (Percoco, 2012^[52]; Temple, 2000^[53]; OECD, 2001b^[54]). Intuitively, social capital can be related to location choices and mode of operation of co-operatives due to their social mission. The literature suggests that the link between co-operatives and social capital is bi-directional: some papers argue that co-operatives contribute to social capital in the places where they operate (Sabatini, Modena and Tortia, 2013^[55]), whereas others argue that social capital lies at the foundation of the co-operative movement (Percoco, 2012^[52]). Indeed, both can be true simultaneously (Ruiu, Seddaiu and Roggero, 2017^[56])

Labour markets and labour force

The role of labour markets and of the quality of labour force in business concentration and productivity has been studied extensively in the literature. Generally, dense labour markets and higher levels of human capital (education and managerial skills) are associated with greater business concentration and productivity (Syverson, 2017^[57]; Doms and Bartelsman, 2000^[58]). The patterns for co-operatives, nevertheless, can be different, particularly when it comes to concentration. Co-operatives tend to fill in niches and offer employment opportunities in thin labour markets (Ammirato, 2018^[59]; Logue and Yates, 2006^[43]).

Industrial structure and business dynamism

Business dynamism is one of the central explanations for differences in productivity performance at both industry and aggregate levels (Foster, L., Haltiwanger, J. C., & Krizan, 2001^[60]; Asturias et al., 2019^[61]; Alon et al., 2018^[62]). Likewise, differing industrial structures will inevitably translate into differences in technologies used and average levels of productivity. Whether these findings hold for co-operatives, however, is not clear, as the literature pays relatively little attention to productivity of co-operatives.

Table 3.2 shows coefficients of simple (one variable) OLS regressions between the group of regional factors approximating social capital and the measures of concentration for co-operatives (CEs and SEs separately) and other companies. Results show that co-operatives tend to be more numerous in regions with lower levels of trust, i.e. in the environments where their presence is arguably needed the most. The higher prevalence of co-operatives, however, does not translate into greater shares of co-operative employment, indicating their relative smaller size.

Table 3.2. Co-operatives are more numerous in regions with low levels of trust but tend to have higher employment

Pairwise regression results.

Independent variable	Dependent variable					
	Number per 100 000 people			Share employment as % of total		
	CEs	SCs	Other	CEs	SCs	Other
Trust	-1.487**	-0.640**	33.555	1.036	2.903*	-3.939*
	(0.401)	(0.211)	(25.395)	(0.958)	(1.196)	(1.499)
N	986	522	1 000	517	517	517
Politically and socially informed and active	-0.287	-0.511	47.386	1.165	0.254	-1.419
	(0.871)	(0.303)	(25.070)	(0.768)	(1.566)	(1.748)
N	986	522	1 000	517	517	517

Note: Each coefficient represents a separate OLS regression. The standard errors, clustered at the NUTS2 level, are presented in brackets. The dependent variable is measured at the NUTS3-sector level, whereas the independent variables varies only at the NUTS2 level. N denoted the number of NUTS3-by-sector observations. *** p<0.01, ** p<0.05, *p<0.10.

Source: OECD calculation based on ISTAT/ASIA, Eurostat, ISTAT/AoDL.

Table 3.3 shows coefficients of simple (one variable) OLS regressions for the group of variables related to the local labour market. The table clearly shows that Italian co-operatives are indeed numerous in regions with more challenging unemployment situations. This is in line with the literature that documents a unique contribution of co-operatives to the underperforming labour markets. Both CEs and SCs tend to be more numerous where rates of long-term and youth unemployment are higher. In contrast, there are fewer social co-operatives in larger labour markets. The differences in prevalence, however, do not translate into larger shares of co-operative employment in underperforming regions. This likely reflects their location decisions, rather than their ability to maintain large employment or to scale up. Notably, the concentration patterns of other firms are often the opposite to those of co-operatives. Non-co-operative companies are more prevalent in larger regions where they account for larger employment shares and are less prevalent in places with a challenging labour market situation. They still account for a larger share of employment in these places too, most likely due to a larger average size compared to co-operatives.

Table 3.3. Co-operatives are more numerous in weaker labour markets

Pairwise regression results.

Independent variable	Dependent variable					
	Number per 100 000 people			Share employment % of total		
	CEs	SCs	Other	CEs	SCs	Other
Log Regional Employment	-0.520 (0.485)	-1.853*** (0.336)	108.375*** (17.714)	-1.612 (1.010)	-5.511*** (0.957)	7.123*** (1.322)
N	976	518	990	513	513	513
Long-term unemployment rate	0.240*** (0.063)	0.159** (0.050)	-10.681** (3.788)	-0.178 (0.188)	-0.530*** (0.149)	0.709** (0.244)
N	976	518	990	513	513	513
Share of 18-24 year-olds population not in education and unemployed or inactive	0.139** (0.046)	0.094** (0.029)	-4.845* (1.735)	-0.202* (0.083)	-0.252** (0.076)	0.454*** (0.101)
N	976	520	990	515	515	515
Youth unemployment rate	0.086* (0.564)	0.069** (0.266)	-3.069* (25.765)	-0.148** (0.700)	-0.137 (1.220)	0.286*** (1.392)
N	986	522	1000	517	517	517

Note: Each coefficient represents a separate OLS regression. The standard errors, clustered at the NUTS2 level, are presented in brackets. The dependent variable is measured at the NUTS3-sector level, whereas the independent variables varies only at the NUTS2 level. N denoted the number of NUTS3-by-sector observations. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Source: OECD calculation based on ISTAT/ASIA, Eurostat, OECD.Stat.

Finally, Table 3.4 displays correlations for the group of variables capturing business dynamics and industrial structure. Consistent with the previous results, the prevalence of co-operatives tends to be the opposite of other firms. Co-operatives are more prevalent in more agricultural regions and in regions with more people involved in the provision of public services such as public administration, education and health. Co-operatives are notably less widespread in more industrial regions with greater share of employment in industry (mining, manufacturing, utilities and waste management activities); social co-operatives are less widespread in regions with stronger ICT. Additionally, social co-operatives are more numerous in regions with higher start-up rates and with lower business survival rates. The latter may be linked to the activities of co-operatives that aim to provide alternative employment opportunities in places where other economic opportunities are fewer.

Table 3.4. Co-operatives are more numerous in regions with more agriculture and public services

Pairwise regression results.

Independent variable	Dependent variable					
	Number per 100 000 people			Share employment % of total		
	CEs	SCs	Other	CEs	SCs	Other
Business birth rate	0.951*	0.604***	-17.807	-0.816	-1.369*	2.185*
	(0.350)	(0.149)	(12.994)	(0.424)	(0.645)	(0.816)
N	976	518	990	513	513	513
3-year survival rate	-0.150	-0.263**	13.552*	-0.578	-0.213	0.791*
	(0.099)	(0.086)	(5.317)	(0.311)	(0.287)	(0.339)
N	976	518	990	513	513	513
Employment % in agriculture, forestry and fishing	0.223**	0.239***	-10.373**	-0.177	-0.026	0.204
	(0.080)	(0.067)	(3.609)	(0.141)	(0.199)	(0.240)
N	976	518	990	513	513	513
Employment % in industry	-0.169***	-0.106***	2.757	0.072	0.309**	-0.381*
	(0.040)	(0.030)	(2.119)	(0.105)	(0.106)	(0.153)
N	976	518	990	513	513	513
Employment % in ICT	-0.412	-1.049***	57.385**	-0.227	-1.624*	1.851
	(0.451)	(0.237)	(18.690)	(0.925)	(0.778)	(1.241)
N	976	518	990	513	513	513
Employment % in public admin., edu., health	0.282***	0.294***	-12.442**	-0.297	-0.182	0.479
	(0.066)	(0.062)	(3.697)	(0.224)	(0.201)	(0.292)
N	976	518	990	513	513	513

Notes: Each coefficient represents a separate OLS regression. The standard errors, clustered at the NUTS2 or NUTS3 level depending on the level of the independent variable, are presented in brackets. The dependent variable is measured at the NUTS3-sector level, whereas the independent variables varies at the NUTS2 level for business birth and survival rates and at the NUTS3 level for the shares of employment by sector. N denoted the number of NUTS3-by-sector observations. *** p<0.01, ** p<0.05, *p<0.10.

Source: OECD calculation based ISTAT/ASIA, Eurostat, OECD.Stat.

3.2.2. Regional factors associated with productivity performance of co-operatives

The exploratory evidence presented in the previous subsection shows that co-operatives are different from other firms when it comes to their location decisions. Most importantly, co-operatives do appear to concentrate in places with lower social trust, higher unemployment rates and specialisation in agriculture and non-tradable sectors, i.e. in regions where the positive social effects of co-operatives are particularly important.

Figure 3.5 already highlighted the differences in average productivity across regions for co-operative enterprises, social co-operatives and other firms. Nevertheless, a relationship between productivity performance and a region of location should not be taken for granted. Some changes in the ordering of regions after accounting for the effects of industrial sector and size as shown in Annex B suggest that both firm-level and potentially regional factors are at play. To ascertain that regions do matter for productivity performance of Italian businesses and to better understand which regional factors are important, this subsection seeks to establish (1) if there is a statistical link between regional characteristics and

productivity performance of individual companies, and (2) which specific regional factors are positively or negatively associated with firm-level productivity.

In the first step, a multivariate regression model is set up in which firm-level productivity is explained by the size of the firm, its age, a detailed two-digit industry code and an indicator variable for the region of location. The former three variables are the most salient determinants of productivity performance at the company level highlighted by the academic literature. If regional factors do not matter, the indicator variables for the region are expected to be insignificant. Statistical significance of individual regional indicators, on the other hand, points to the role played by regional factors and calls for further, more detailed, analysis.

Regional indicators in the regression model are included as a binary variable for each region, which are equal to one if a company is located in a given region and zero otherwise. Such design allows to assess whether variation in firm-level productivity performance is partially explained by constant factors associated with each specific region. Statistically significant estimation results show for which regions this is the case. The estimation coefficient, however, does not indicate the magnitude of the effect. Instead, it shows whether productivity of companies located in a given region is higher or lower compared to productivity of the omitted category (a region for which the model does not include a dedicated dichotomous variable). Piedmont, a region in the middle of the productivity distribution, is used as the omitted category. All estimates are to be interpreted relative to it. For example, after controlling for the size, age and industry effects, productivity of co-operative enterprises and social co-operatives in Lombardy is lower than productivity of the corresponding enterprise groups in Piedmont, while other firms are more productive.

Table 3.5. Regional factors are statistically linked to productivity of Italian co-operatives

Multivariate regression results; dependent variable: Firm-level 2017 Multi-Factor Productivity (in 2005 constant prices).

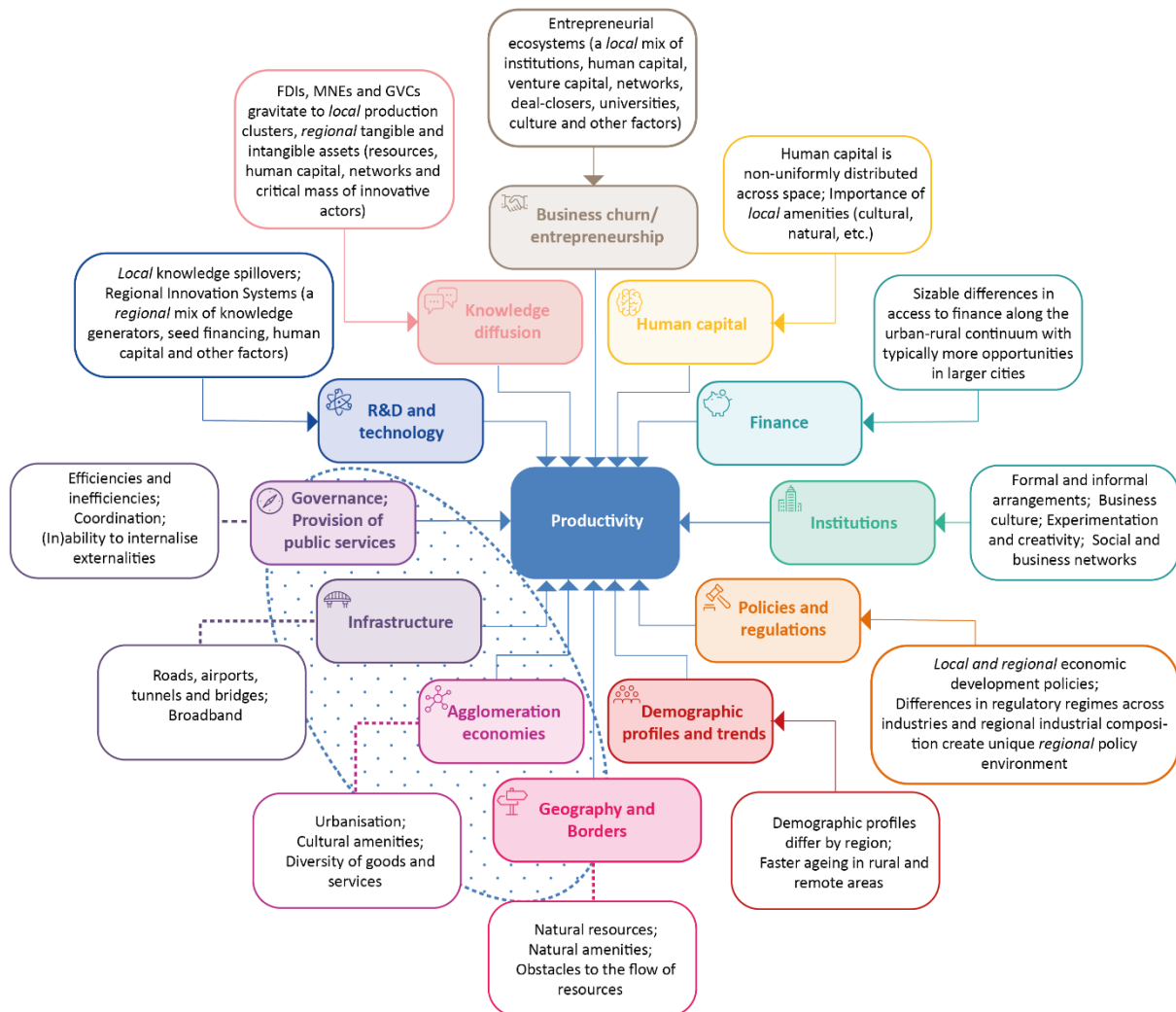
	Co-operative enterprises	Social co-operatives	Other firms
Age (years)	0.010*** (0.001)	0.010*** (0.001)	0.018*** (0.001)
Size (number of workers)	0.000** (0.000)	0.000*** (0.000)	0.000*** (0.000)
<i>Regional fixed effects</i>			
Aosta Valley	-0.100*** (0.011)	0.163*** (0.045)	-0.066*** (0.004)
Liguria	-0.152*** (0.007)	-0.075*** (0.010)	-0.077*** (0.003)
Lombardy	-0.021*** (0.005)	-0.055*** (0.010)	0.068*** (0.001)
Abruzzo	-0.341*** (0.006)	-0.384*** (0.022)	-0.215*** (0.003)
Molise	-0.324*** (0.004)	-0.222*** (0.013)	-0.353*** (0.004)
Campania	-0.370*** (0.006)	-0.525*** (0.014)	-0.232*** (0.004)
Apulia	-0.359*** (0.007)	-0.455*** (0.023)	-0.266*** (0.004)
Basilicata	-0.382*** (0.007)	-0.501*** (0.020)	-0.278*** (0.003)
Calabria	-0.468*** (0.006)	-0.404*** (0.022)	-0.310*** (0.004)
Sicily	-0.439***	-0.484***	-0.273***

	Co-operative enterprises	Social co-operatives	Other firms
	(0.007)	(0.023)	(0.004)
Sardinia	-0.269***	-0.200***	-0.192***
	(0.011)	(0.015)	(0.003)
Bolzano/Bozen	0.095***	0.233***	0.296***
	(0.015)	(0.023)	(0.004)
Trento	0.029	0.187***	0.080***
	(0.037)	(0.008)	(0.002)
Veneto	-0.058***	-0.003	0.009***
	(0.005)	(0.008)	(0.001)
Friuli-Venezia Giulia	-0.080***	-0.087***	-0.020***
	(0.010)	(0.013)	(0.002)
Emilia-Romagna	0.073***	-0.028*	0.019***
	(0.006)	(0.015)	(0.001)
Tuscany	-0.111***	0.028	-0.100***
	(0.008)	(0.018)	(0.003)
Umbria	-0.225***	-0.112***	-0.209***
	(0.005)	(0.022)	(0.002)
Marche	-0.226***	-0.297***	-0.162***
	(0.006)	(0.015)	(0.002)
Lazio	-0.213***	-0.230***	-0.144***
	(0.006)	(0.011)	(0.004)
Constant	10.909***	8.888***	13.395***
	(0.038)	(0.194)	(0.836)
Industry fixed effects	Yes	Yes	Yes
Observations	26 815	4 021	459 204
R-squared	0.219	0.295	0.298

Note: regional coefficients show how average productivity differs from that in Piedmont; standard errors clustered at the NUTS2 level in parentheses; *** p<0.01, ** p<0.05, *p<0.10.

The most important conclusion from Table 3.5 is that regional factors still matter for productivity performance of individual firms even after the model accounts for each firm for the effects of its size, age and industry. This calls for a more detailed investigation into regional factors that can be associated with productivity of Italian enterprises. Previous OECD work (Tsvetkova et al., 2020^[29]) details 12 specific mechanisms that can link regions to productivity of their firms. Figure 3.11 displays the main mechanisms and briefly explains them.

Figure 3.11. Twelve mechanisms link regional factors to productivity performance



Source: (Tsvetkova et al., 2020^[29]).

To conduct a multivariate estimation, one or more variables to approximate each of the 12 mechanisms are selected based on the existing academic literature, data availability and methodological considerations. The variables capturing the 12 mechanisms are supplemented with two controls of the underlying economic conditions, long-term unemployment and share of employment in agriculture.

Table 3.6 lists the regional variables, offers their descriptions and data sources. In addition to the regional variables, the model controls for the effects of size and age of each company and for the invariant industry-level (2-digit NACE code) characteristics.

Table 3.6. Regional factors used in estimation

Mechanism	Variable	Description	Source
Entrepreneurship	Start-up rate	2017 share of new firms (same sector same size class)	OECD.Stat
Human capital	Education	2017 share of adult population with tertiary degree	
Finance	Banks	2019 number of bank branches in a province per 10 000 population	Bank of Italy
Institutions	Trust	A standardised sum of responses to four questions (whether a wallet is expected to be returned by a stranger, a police officer and a neighbour, respectively, and whether people in general can be trusted)	ISTAT survey "Aspects of Daily Life"
Policies and regulations	Cohesion funds	The 2014-2020 amount of EC cohesion funds per 10 000	Open cohesion
Demography	Median age	2017 median age	Eurostat
Geography and borders	Border	A dummy variable if a province has an international land border	Eurostat
	Mountain	A dummy variable indicating a mountainous province (more than 50% of the surface is covered by topographic mountain areas or more than 50% of the regional population lives in these mountain areas)	Eurostat
Agglomerations	Density	2016 province population density (in 1000s) per square kilometre	OECD.Stat
Infrastructure	Roads	2017 length of roads other than highways (in 1000s)	Eurostat
Governance	Impartiality	2015 standardised index of impartiality in public service provision	Quality of Government Institute
	Corruption	2015 standardised index of (lack of) corruption in a region	Quality of Government Institute
R&D and technology	R&D employment	2017 share of R&D employment	Eurostat
Knowledge diffusion	FDIs	Number of enterprises receiving FDI per 10 000 residents	(Bentivogli et al., 2016 ^[63])
Pre-existing economic conditions			
	Unemployment	Long-term unemployment rate, %	OECD.Stat
	Agriculture	2016 share of total employment in agriculture	Eurostat

Note: Variables are at the regional (NUTS2 level) unless otherwise indicated.

Table 3.7 shows regression estimation results. The statistically significant coefficients indicate association. The nature of the data does not allow for a rigorous testing of the causal effect between the dependent and explanatory variables. Still, the uncovered associations are useful for a better understanding of geographical patterns in the economic performance of co-operatives.¹⁷

In all groups of enterprises, age and size are positively related to productivity. This result is well documented in the literature for many countries and industries (Marchese et al., 2019^[50]). When it comes to the regional factors, several noteworthy patterns emerge. First, regional characteristics associated with productivity of co-operative enterprises are almost identical to those of other firms. Except for the access to finance (positively related to productivity of other businesses but insignificant for CEs, potentially reflecting lower reliance on bank financing for the latter (Sabatini, Modena and Tortia, 2013, p. 621^[55]; International Labour Organization, 2019^[64]; George, Fontanari and Tortia, 2020^[47]), the estimation results are generally the same. Co-operative enterprises tend to perform better in regions with less corruption and in those that are more innovative and more globally connected (although the latter effect is only weakly significant for CEs). While co-operative enterprises may be less likely to engage in R&D or benefit from

¹⁷ The reported results are based on averages for the whole country. To derive region-specific estimates, both dependent and explanatory variables must vary within each region, which is not the case for the explanatory variables in this research (there is no within-region variation in many explanatory variables, which are measured at NUTS2 level).

FDIs, they can take advantage of knowledge spill-overs and other positive externalities that characterise more dynamic and open regions. Interestingly, co-operative enterprises tend to be more productive in regions that receive more cohesion funds from the EU but also in mountainous provinces¹⁸ (the latter result is significant at the 0.10 level only).

Productivity of all types of enterprises (CEs, SCs and other firms) tends to be lower in regions with higher unemployment rates and greater involvement in agriculture as measured by agricultural employment share. The former result is noteworthy. Despite the fact that co-operatives (both CEs and SCs) on average are less productive in regions with weaker labour markets, they are more numerous in such regions (recall Table 3.3). This confirms their role in filling in the voids left by the private sector.¹⁹ Another noteworthy result is that SCs are on average less productive in regions with greater shares of R&D employment. Such regions are usually more affluent and support a more robust foundational economy. If this is the case, the voids left for the social co-operatives to fill would likely be in less productive activities.

Table 3.7. Co-operatives are more productive in regions with less corruption; CEs are more productive in more innovative regions, but also in regions with more cohesion funds

Multivariate regression results; dependent variable: Firm-level 2017 Multi-Factor Productivity (in 2005 constant prices).

	Co-operative enterprises	Social co-operatives	Other firms
Age (years)	0.010*** (0.001)	0.011*** (0.001)	0.018*** (0.001)
Size (number of workers in 1000)	0.417** (0.000)	0.224*** (0.000)	0.087*** (0.000)
<i>Regional characteristics</i>			
Start-up rate	0.007 (0.018)	-0.006 (0.020)	0.011 (0.013)
Education	-0.012* (0.006)	0.006 (0.010)	-0.021*** (0.004)
Banks	0.166 (0.147)	0.146 (0.293)	0.180** (0.083)
Trust	-0.007 (0.005)	0.000 (0.005)	0.003 (0.005)
Cohesion funds	0.049*** (0.017)	-0.046 (0.036)	0.022 (0.022)
Median age	-0.003 (0.009)	0.012 (0.010)	-0.002 (0.005)
Border	0.034 (0.045)	0.028 (0.060)	0.028 (0.022)
Mountain	0.038* (0.020)	0.007 (0.027)	0.014 (0.012)
Density	0.044*** (0.000)	0.030 (0.000)	0.057*** (0.000)
Roads	-0.002	-0.006**	0.001

¹⁸ Current research shows that geography can be linked to the regional growth prospects. Mountainous regions are characterised by distinctive ecological, social and economic characteristics. They are also often a focus of targeted policy interventions, which is likely to create a unique socioeconomic setting that needs to be accounted for in a regression analysis.

¹⁹ Other firms, which also tend to be less productive in regions with higher unemployment, are statistically less numerous in such regions.

	Co-operative enterprises	Social co-operatives	Other firms
	(0.000)	(0.000)	(0.000)
Impartiality	0.056	0.033	0.044
	(0.035)	(0.054)	(0.032)
Corruption (lack of)	0.063**	0.240***	0.035
	(0.025)	(0.051)	(0.026)
R&D employment	0.205***	-0.159**	0.087**
	(0.043)	(0.071)	(0.037)
FDIs	0.080*	-0.079	0.109***
	(0.040)	(0.052)	(0.033)
Unemployment	-0.012**	-0.012*	-0.014***
	(0.005)	(0.007)	(0.003)
Agriculture	-0.010***	-0.009***	-0.007**
	(0.003)	(0.003)	(0.003)
Constant	11.004***	8.820***	13.478***
	(0.588)	(0.727)	(0.955)
Industry FE	Yes	Yes	Yes
Observations	26 815	4 021	459 204
R-squared	0.220	0.292	0.299

Note: standard errors clustered at the NUTS2 level in parentheses; *** p<0.01, ** p<0.05, *p<0.10.

3.2.3. Firm-level practices: digitalisation and innovation

Regional factors are important for productivity. Yet, enterprise-level practices are the main determinants of productivity performance, whose effects can be amplified or hindered by regional environment and characteristics. Digitalisation and innovation are the central drivers of business competitiveness and productivity. Using innovative digital tools and practices, such as client facing technologies (e.g. a web site), online sales or teleworking can expand the market, cut transaction costs and improve work-life balance of the workers. However, opportunities and barriers to innovation, and digitalisation in particular, differ by region and can also be targeted by place-based policies.

To understand these issues better, Orbis-based productivity estimates are combined with data from a recent survey among co-operatives conducted at the request of the Italian Ministry of Economic Development (Box 11 provides more details). First, responses from the survey sections on digitalisation and innovation activities are combined into two separate scores for each region, digitalisation score and innovation score, respectively. These scores are plotted against regional TFP estimates (simple weighted averages). Second, motivations for and barriers to innovation and digitalisation within co-operatives are explored further.

Box 11. The national survey of Italian co-operatives during COVID-19

During the early stage of the pandemic, the Ministry of Economic Development tasked the polling firm Questlab to conduct a survey on Italian co-operatives. The ministry is expected to issue a summary report in early 2021. The survey focused on two areas: innovation and digitalisation, and the repercussions of COVID-19.

The chapter on innovation contains various questions on the type of innovation adopted (e.g. product, process or organisation) and the reasons for and against such choices. Questions on digitalisation similarly differentiate between various types of investment (e.g. from setting up a web site or a social media profile to using cloud-based management services).

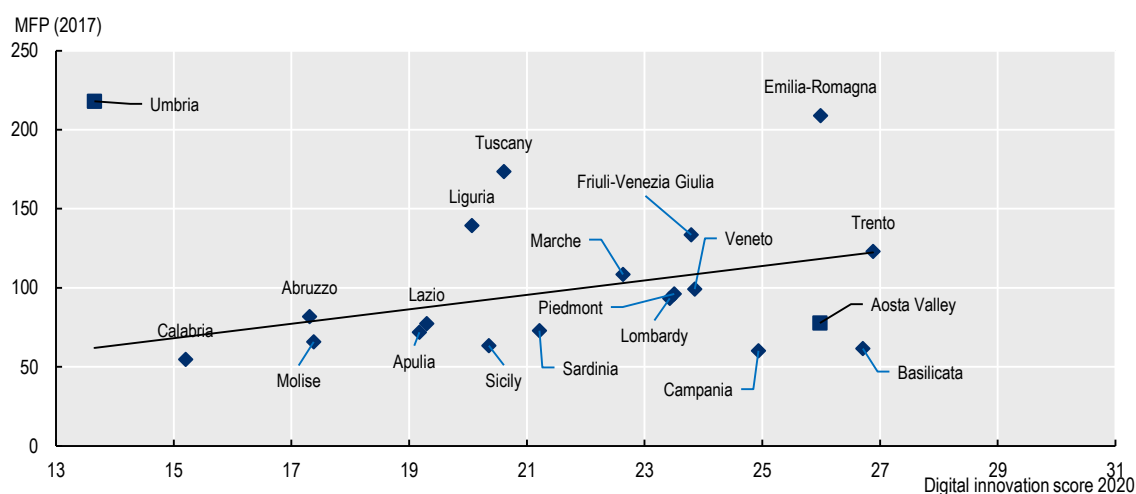
The survey also allows for an insight into the role of co-operatives during the pandemic, e.g. in terms of their activities in support of their local communities and the effect on revenues.

The survey was conducted from 8 June to 7 July 2020. It was closed when approximately 1 600 co-operatives responded, which, as sampling weights show, constitutes a representative subset from a sectorial, geographical and legal point of view. Anonymous responses were made available to the OECD for further analysis in the context of this report.

Digitalisation, innovation and productivity in Italian co-operatives

Figure 3.12 plots the performance of Italian co-operatives by region along two dimensions, i.e. average productivity and the adoption of digital tools. The digital innovation score is generated by aggregating answers of the participating co-operatives on their experience of using 10 digital tools. The score ranges from zero to 100. The maximum score is achieved if all firms adopt all 10 tools and zero indicates no firms using any tool. Findings reveal a generally strong positive relationship with two notable exceptions. Umbria demonstrates very low levels of digital adoption but high Multi-Factor Productivity of co-operatives. The opposite is the case for Basilicata. A correlation between co-operative productivity and the adoption of digital tools at the regional level is 0.31 if Umbria (an outlier) is excluded from calculations; it increases to 0.36 if Aosta Valley (region with very few survey responses) is also dropped.

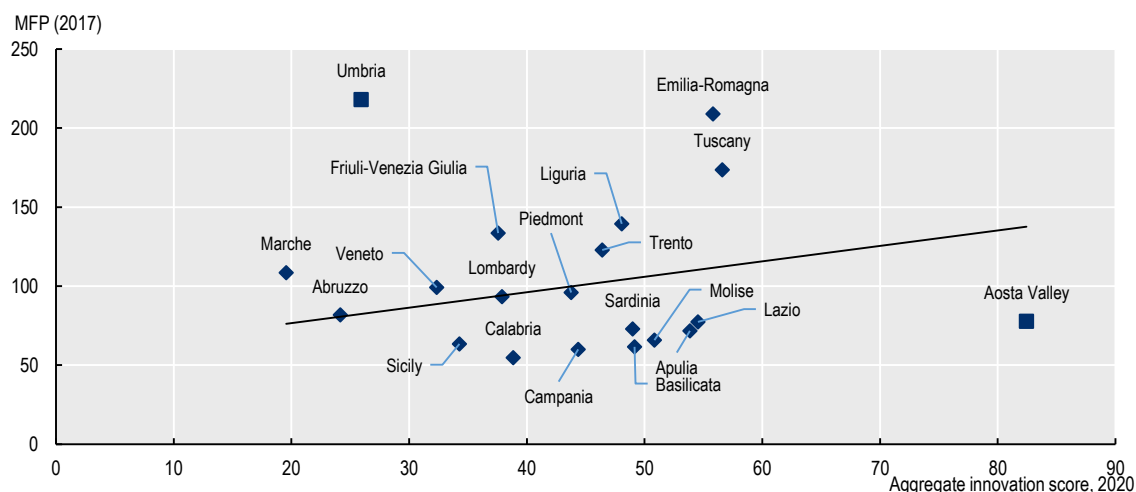
Figure 3.12. There is generally a positive association between productivity and adoption of digital tools



Note: Productivity calculations are based on Orbis (constant 2005 prices), weighted average for each region. Digital innovation represents a weighted average of co-operative responses on the adoption of 10 digital tools. A correlation between co-operative productivity and adoption of digital tools at the regional level is 0.36 if Umbria (as outlier) and Aosta Valley (under-representative) are excluded. Source: OECD calculations based on Orbis and MISE survey.

Figure 3.13 presents the same MFP estimates against the innovation score, which combines responses on product, process and organisational innovation activity. At first sight, the correlation appears less strong. However, two outliers muddy the picture also in this case. Excluding Aosta Valley (represented by very few responses) and Umbria, results in a correlation of 0.24.

Figure 3.13. There is weak positive association between productivity and innovation activities



Note: Productivity calculations are based on Orbis (constant 2005 prices), weighted average for each region. Aggregate innovation represents a weighted sum of co-operative responses on the adoption of product, process and organisational innovation. A correlation between co-operative productivity and the innovation score at the regional level is 0.24 if Umbria (as outlier) and Aosta Valley (under-representative) are excluded. Source: OECD calculations based on Orbis and MISE survey.

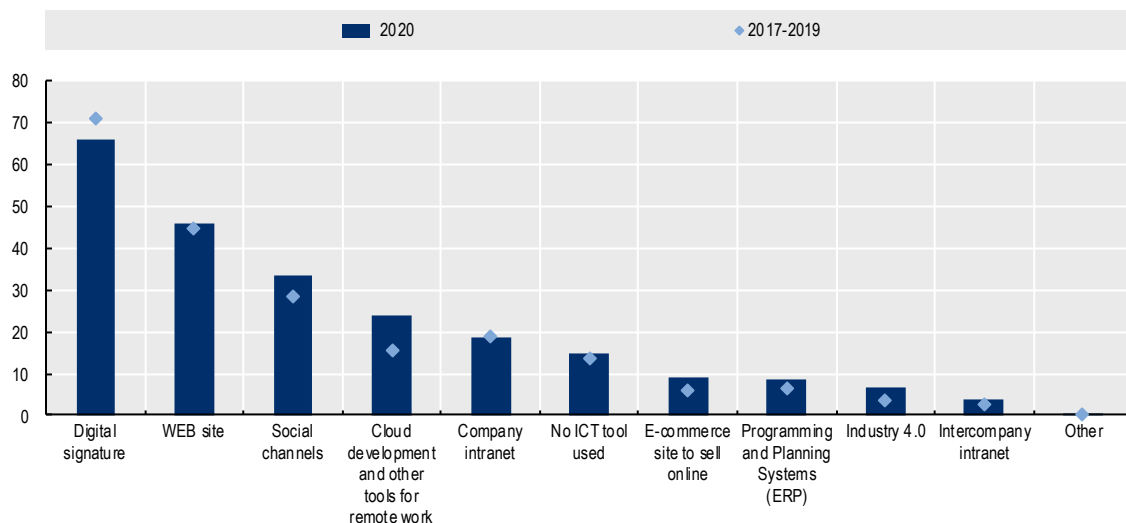
These two scores reflect how prevalent the use of digital tools and innovation activities is among co-operatives in different regions. The scores appear positively related to average regional productivity of Italian co-operatives. Yet, the plots also indicate that for a given level of estimated productivity, there are large difference in (digital) adoption. Therefore, understanding the motivations and potential barriers that co-operatives face in engaging more productively with new technologies is important.

Digitalisation among Italian co-operatives

The adoption of different digital tools among co-operatives is uneven (Figure 3.14). Those that are easy to use or relatively inexpensive are most prevalent. For example, most respondent co-operatives use a digital signature. Between 30% and 50% of co-operatives have a web site and utilise social media. More sophisticated tools, such as cloud services or company intranet, are less widely used. Notably, 15% of respondents do not use any ICT tools. This share stayed the same between 2017 and 2020.

Figure 3.14. Many co-operatives use easy-to-access digital tools but few adopt state-of-the-art technologies for internal production use

Weighted percentage of co-operatives that use each of the listed technologies.

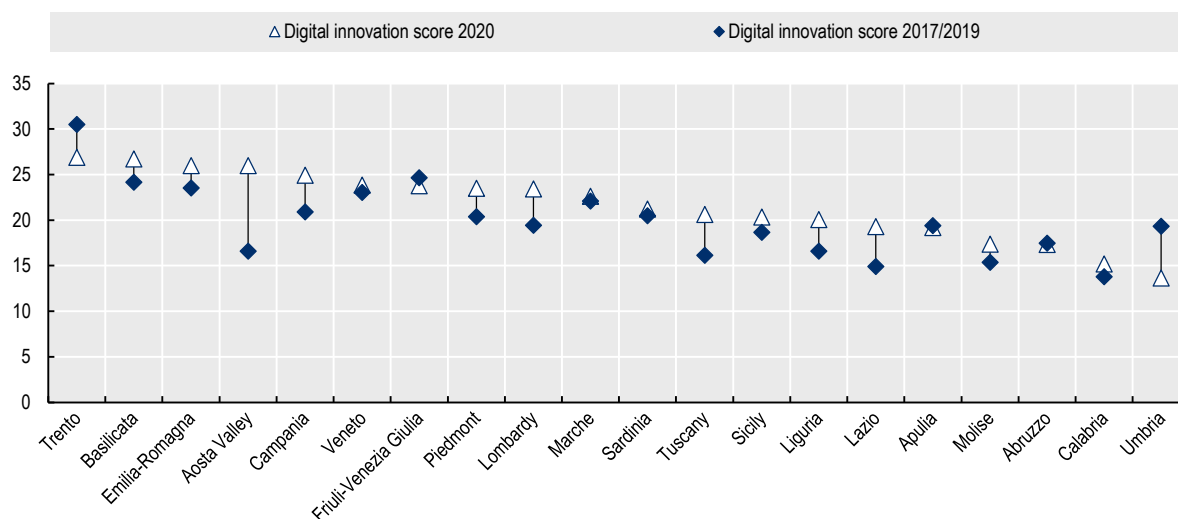


Source: OECD calculations based on MISE survey.

Innovative practices and the adoption of digital tools by co-operatives differ across regions and industrial sectors. There are also notable changes over time, with a general trend of inter-regional convergence. Figure 3.15 illustrates this, showing the digital adoption index by region for 2020 and the three previous years. Co-operatives in the majority of regions expanded the use of digital tools, with notable exceptions of Trento (whose co-operatives were considerably ahead of other regions in digital tools adoption) and Umbria. Co-operatives in several regions, such as Aosta Valley, Campania, Lombardy, Tuscany and Lazio, sizeably increased their digital adoption score in 2020.

Figure 3.15. Adoption of digital tools by co-operatives varies across regions, but there is convergence over time

Normalised (0-100) index of ten questions on the extent of adoption of digital tools across regions using weighted responses of co-operatives.

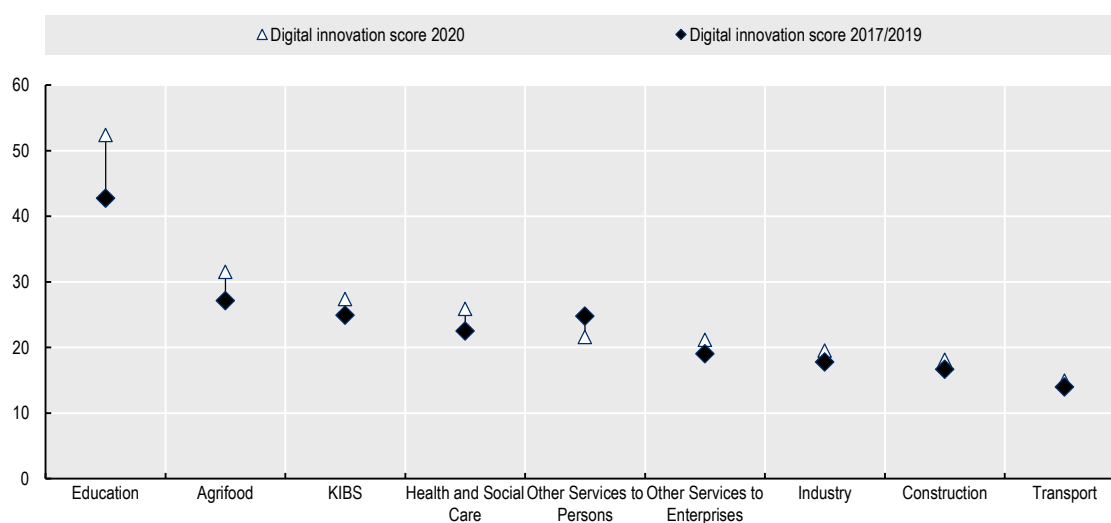


Source: OECD calculations based on MISE survey.

Differences across industrial sectors, on the other hand, are more persistent. Co-operatives in Education, Agrifood, KIBS, Health and Social Care as well as Other Services to Persons tend to use relatively more digital tools. In 2020 (compared to the previous three years), the largest increase in the digitalisation score was observed in industries with already high use of digital tools. Education increased such use most dramatically, likely due to a massive shift to online tools during the COVID-19 pandemic.

Figure 3.16. There is substantial variation in use of digital tools across sectors, with differences increasing over time

Normalised (0-100) index of ten questions on the extent of adoption of digital tools across regions using weighted responses of co-operatives.

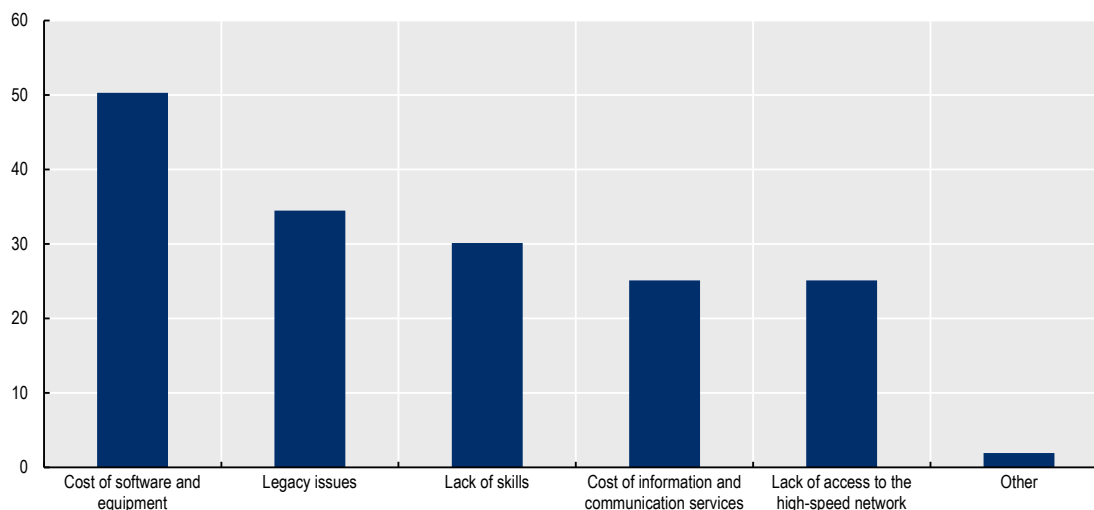


Source: OECD calculations based on MISE survey.

Specific barriers likely drive differences in digitalisation across regions and sectors. Overall, co-operatives cite costs of equipment, legacy issues,²⁰ lack of skills, costs of ICT services and a lack of infrastructure as the main impediments in 2020 (Figure 3.17).

Figure 3.17. High costs, low absorptive capacity and inadequate infrastructure are the main impediments to digitalisation

Weighted percentage of co-operatives reporting each barrier to the adoption of digital tools.



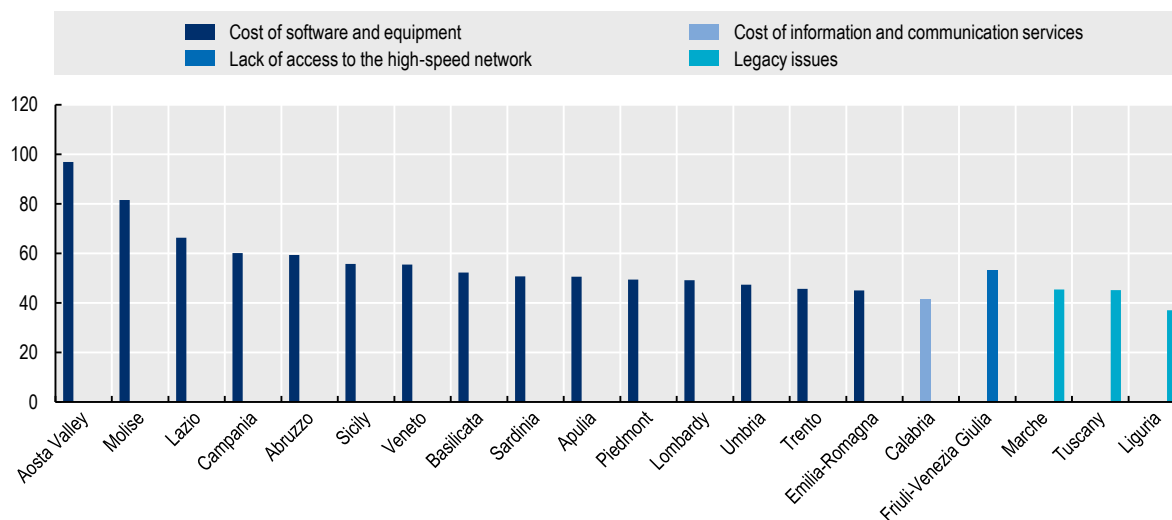
Source: OECD calculations based on MISE survey.

Figure 3.18 lists top barriers reported by surveyed co-operatives in each region. The most common impediments are costs (of equipment or ICT services), legacy issues and inadequate infrastructure. Across industrial sectors, costs and legacy issues feature as the main barriers (Figure 3.19).

²⁰ The literal response is “Difficulty in integrating technologies into the company’s current way of operating”.

Figure 3.18. The top barriers to digitalisation reported across regions are high costs, low absorptive capacity and a lack of infrastructure

Weighted percentage of co-operatives reporting each barrier to adoption of digital tools.

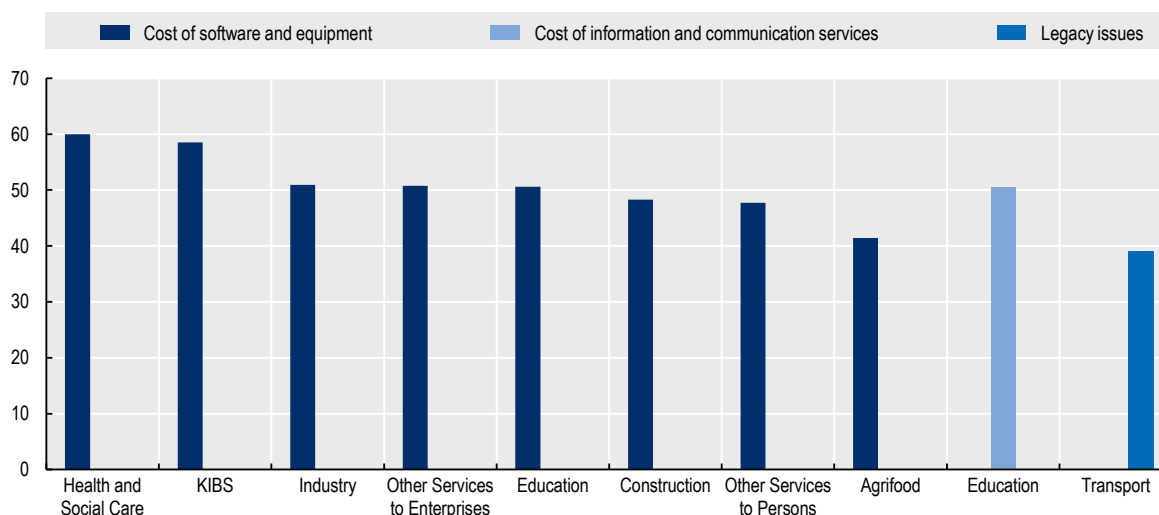


Note: The figure reports the highest ranking issue for each region. A higher bar indicates a greater consensus on the indicated aspect, but it should not be interpreted that the issue in one region is therefore larger than in another.

Source: OECD calculations based on MISE survey.

Figure 3.19. The top barriers to digitalisation reported across sectors are high costs and low absorptive capacity

Weighted percentage of co-operatives reporting each barrier to adoption of digital tools.



Note: The figure reports the highest-ranking issue for each sector. A higher bar indicates a greater consensus on the indicated aspect, but it should not be interpreted that the issue in one sector is therefore larger than in another.

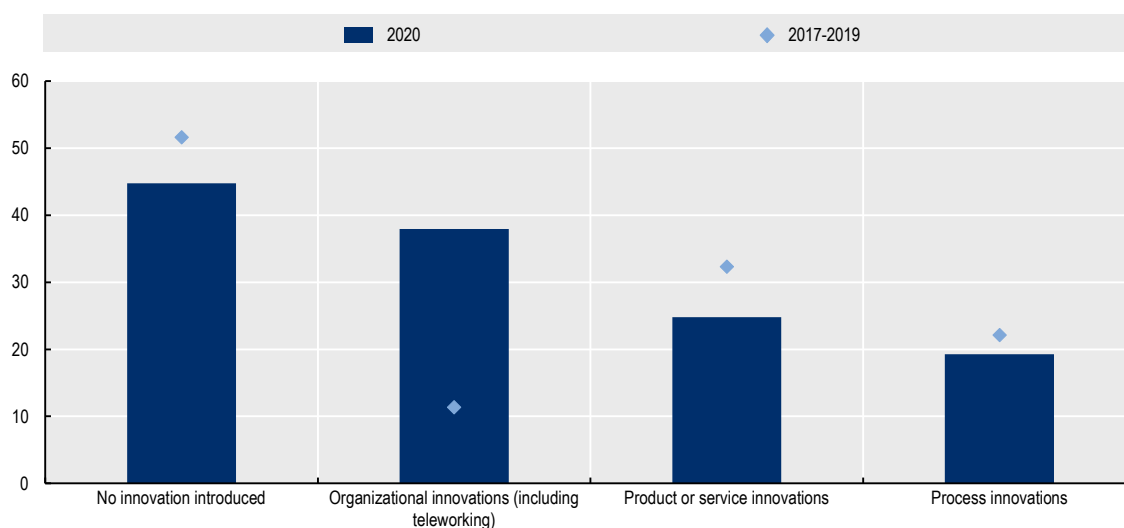
Source: OECD calculations based on MISE survey.

Innovation among Italian co-operatives

The COVID-19 pandemic has changed the reality of all enterprises. Social and economic actors had to adapt, often by changing their mode of operation and by introducing a range of new practices. Figure 3.20 shows the share of survey respondents by type of innovation in 2017-2019 and in 2020. The figure reveals that generally innovations are not as common among Italian co-operatives. Although co-operatives were more innovative in 2020 compared to the prior three-year period, the share of respondents who report no innovations is 45% (down from 52% in the three previous years). During the crisis, co-operatives were pressed to focus on operational innovations, including teleworking arrangements. The share of co-operatives active in this area more than tripled, increasing from 11% in 2017-2019 to 38% in 2020. The adjustments came at the expense of product and process innovation, both of which have declined in 2020.

Figure 3.20. Although the share of co-operatives introducing organisational innovations (including teleworking) more than tripled, almost half of co-operatives do not innovate at all

Weighted percentage of co-operatives reporting introduction of specific innovations or a lack of thereof.



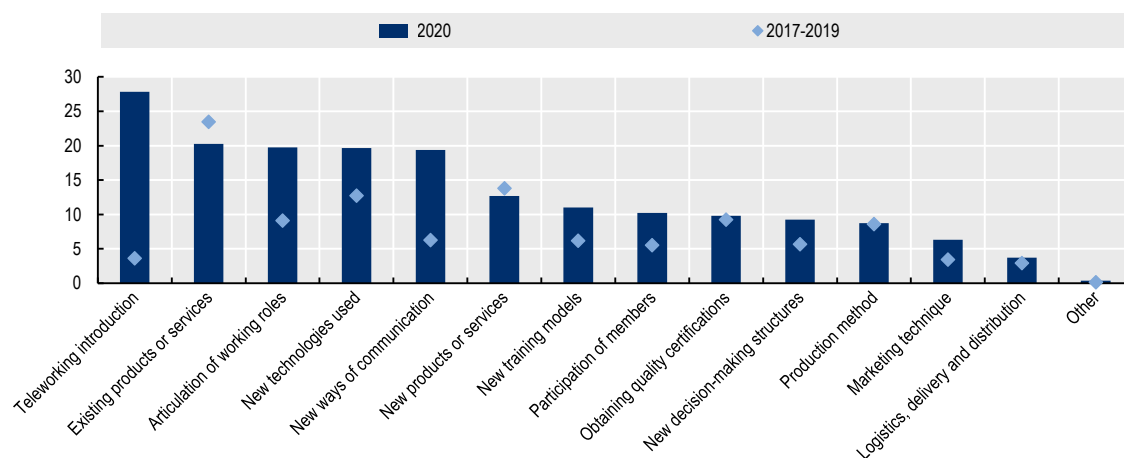
Source: OECD calculations based on MISE survey.

Looking at the prevalence of specific innovations among the Italian co-operatives, the introduction of teleworking went up from 4% during 2017-2019 to 28% in 2020.²¹ Likely because of the pandemic, co-operatives were more engaged in the articulation of new working roles, new ways of communication and technologies, new training models and increased participation of members. Indeed, the uncertain times called for new solutions in work organisation and co-operatives appear to make corresponding changes. The focus shifted away from innovations in existing products or services, production methods or obtaining certifications (Figure 3.21).

²¹ This figure is higher than the reported Italian average over the same period (ISTAT Statistical Report, 15 June 2020, <https://www.istat.it/it/archivio/251618>). Accounting for difference in the sectoral distribution of the co-operatives and other firms suggests that the percentage of teleworking among co-operatives is comparable to the upper range of teleworking adoption among other Italian firms.

Figure 3.21. The use of teleworking soared in 2020, together with other new ways of operation

Weighted percentage of co-operatives reporting on the introduction of new or improved practices by category.

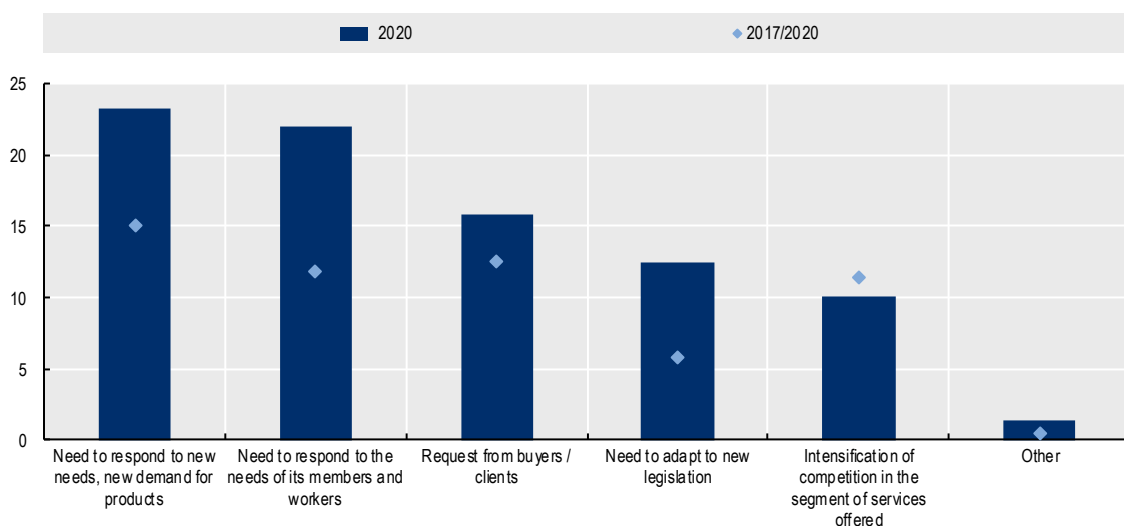


Source: OECD calculations based on MISE survey.

Innovations by the Italian co-operatives were mostly driven by the new needs – either from their members or from buyers and in the market. This holds for the universe of co-operative respondents, as well as for responses by industrial sector and by region (Figure 3.22, Figure 3.24 and Figure 3.23, respectively).

Figure 3.22. New needs of members and workers are the main driver of co-operative innovation

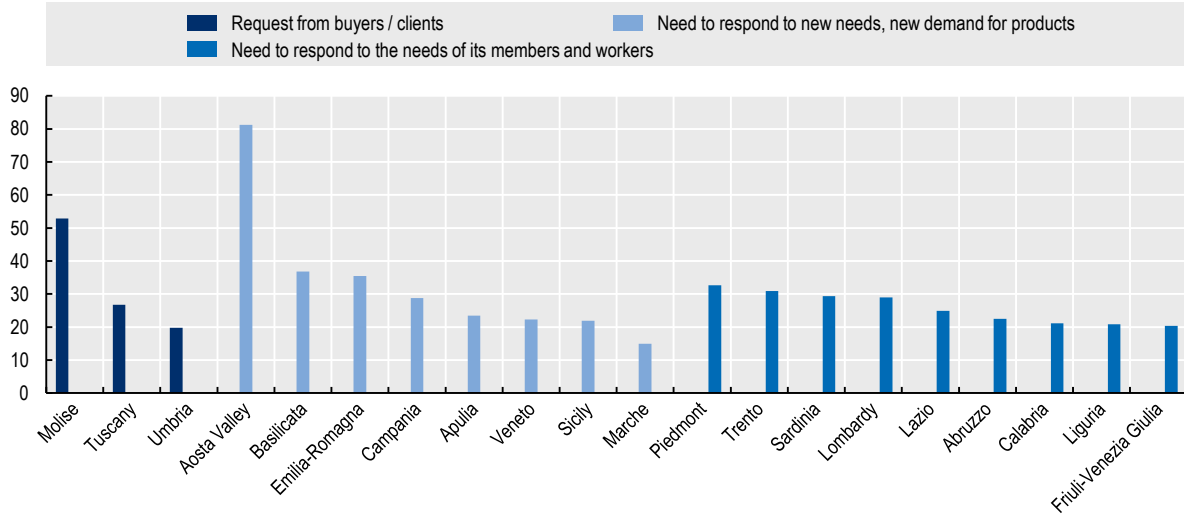
Weighted percentage of co-operatives reporting on the main drivers of their innovative behaviour by category.



Source: OECD calculations based on MISE survey.

Figure 3.23. The need to respond to the needs of members and workers is the main innovation driver in most regions

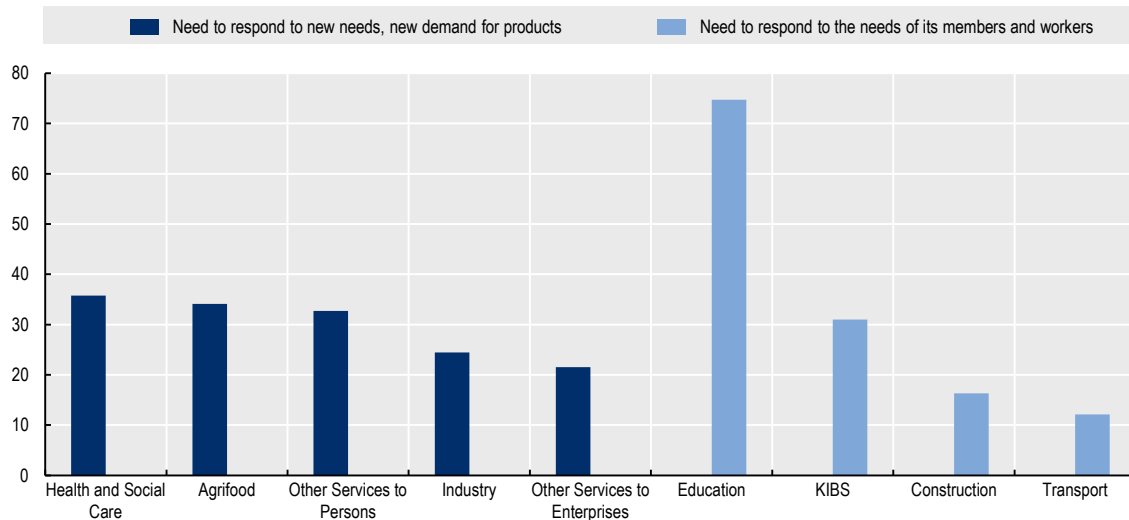
Weighted percentage of co-operatives reporting on the main drivers of their innovative behaviour by category.



Note: The figure reports the highest-ranking issue for each region.
Source: OECD calculations based on MISE survey.

Figure 3.24. The need to respond to new demands from clients or members is the main innovation driver across sectors

Weighted percentage of co-operatives reporting on the main drivers of their innovative behaviour by category.



Note: The figure reports the highest-ranking issue for each sector.
Source: OECD calculations based on MISE survey

4. International comparative analysis: The case of Spain

This section offers a brief analysis of the productivity performance of Spanish co-operatives. They make up just 1-2% of total the national employment, a significantly lower share compared to Italy. Concentration is another key feature, with the Basque Country accounting for more than half of total national co-operative employment. Spanish co-operatives are on average more productive than non-co-operative businesses, a result driven by an outstanding performance in the Basque Country.

While Italian co-operatives tend to be on average less productive than firms outside of the co-operative sector, this is not universally true. A closer look at co-operatives in other countries could help position the Italian co-operative sector in perspective, and potentially identify opportunities for improving its productivity. This section focuses on Spain, a country of similar size and spatial context for which suitable data are available. A cross-country analysis will help us understand how factors such as geography, the industrial composition and firm size affect co-operative productivity in a comparable context.

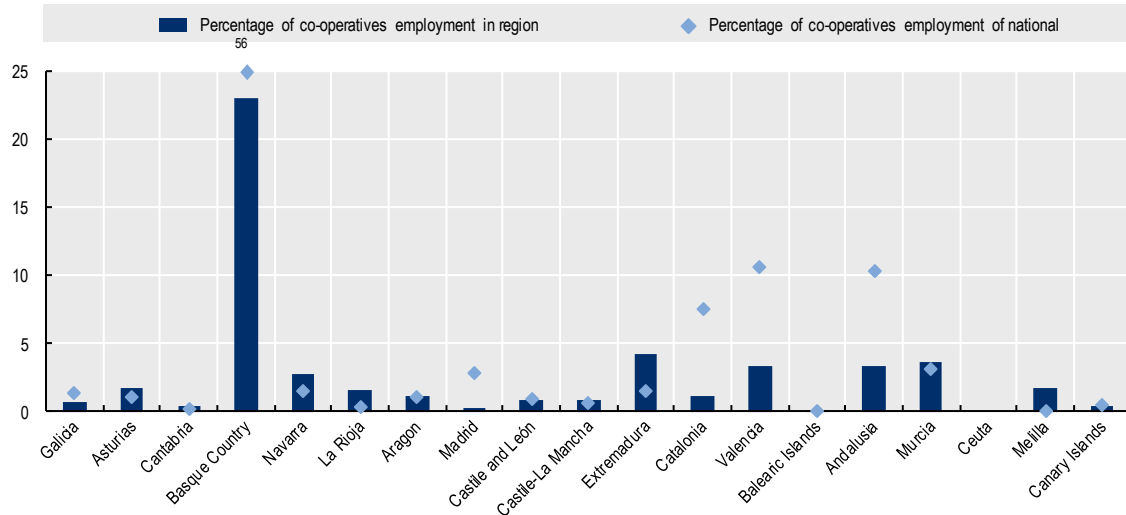
4.1. Co-operative employment concentration in Spain

In 2017, there were about 20 000 co-operative enterprises in Spain. They employed between 177 000 to 428 000 people, constituting 1.1% to 2.7% of total employment (the Spanish Statistical Office, INE, reports minimum and maximum employment estimates, see Box A.3). This means that the Spanish co-operative sector is considerably smaller than that of Italy, where co-operatives made up about 6.6% of total jobs in 2017.

A distinctive feature of the Spanish co-operative sector is its extreme geographical concentration in only a handful of regions, most notably the Basque Country. Around 20% of all employment in the Basque Country is in co-operatives. The region also accounts for 53% of all national co-operative employment (Figure 4.1). This is in stark contrast to Italy, where co-operatives are prevalent across the whole country and represent a shared national form of economic production.

Figure 4.1. More than 50% of co-operative employment in Spain is in Basque Country; other important regions are Andalusia, Valencia and Catalonia.

Employment as percentage of total regional employment and as percentage of national employment in co-operatives.



Note: Data for 2017.

Source: OECD calculations based on Orbis.

4.2. Productivity performance of co-operatives in Spain

4.2.1. The national view over time

Spanish co-operatives, as reported by Orbis, are more productive compared to firms outside of the co-operative sector. Figure 4.2 shows a productivity index for 2017, with productivity of co-operatives outside of the Basque Country (a clear outlier) taken as 100. Productivity level of companies (both co-operative and private) outside of the Basque Country grew over time, but the growth was stronger for co-operatives. In 2017, the difference in productivity between co-operatives and non-co-operatives was 15 percentage points, up from a 12 percentage-point difference in 2012. Among co-operatives outside of the Basque Country, productivity growth was the strongest among the median and low performers. Top performers experienced a sizable decline in productivity between 2012 and 2017.²² Despite these trends, the productivity performance dispersion among co-operative enterprises in the rest of Spain remained quite high, with differences between those in the 25th and the 75th quantile by 77 percentage points.

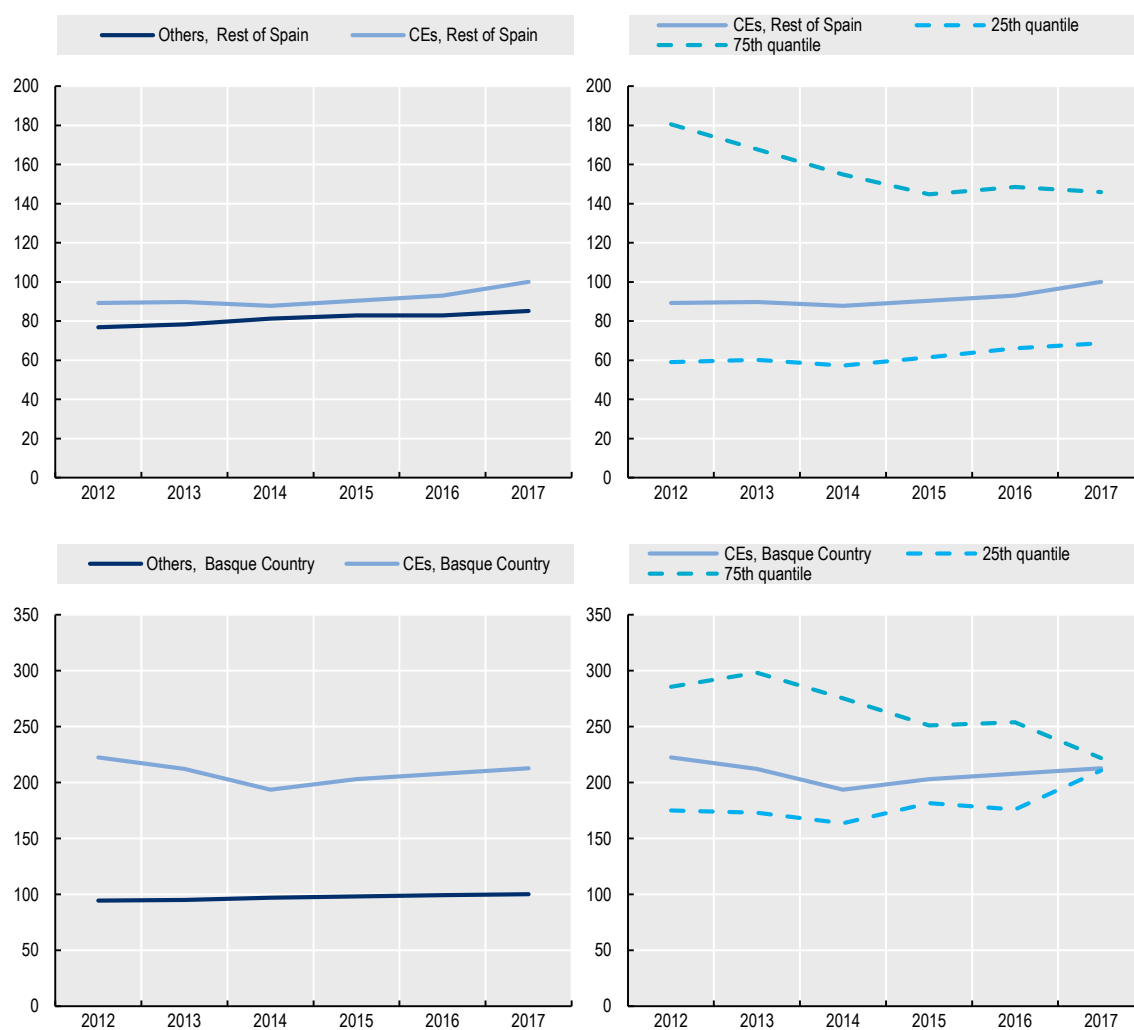
The case of the co-operative sector in the Basque Country is unique (See Box 12). While co-operatives internationally tend to be more prevalent in agrifood, the consumer and banking sectors, the co-operative ecosystem of the Basque Country has a strong industrial component (Pérez González and Valiente Palma, 2016^[65]). The lower two panels of Figure 4.2 show productivity performance of co-operatives and other enterprises in the Basque Country over time. Co-operatives are considerably more productive than other firms. Instead, focussing just on the productivity performance of Basque co-operatives, divergence

²² As the quantiles are calculated for each year separately, this effect may be due to a changing set of firms on which these statistics are calculated, rather than a decrease of productivity of a constant selection of firms. See also footnote 13.

between top- and worst-performers disappeared over time, with productivity converging during 2012-2017 to that of the mean Basque co-operative enterprise.²³

Figure 4.2. Spanish co-operatives, particularly in the Basque Country, are more productive than other firms

Index: The mean 2017 value of Multi-Factor Productivity (MFP) of non-Basque co-operatives in 2005 constant euros=100.



Note: Firm-level observations are weighted by employment.

Source: OECD calculations based on Orbis.

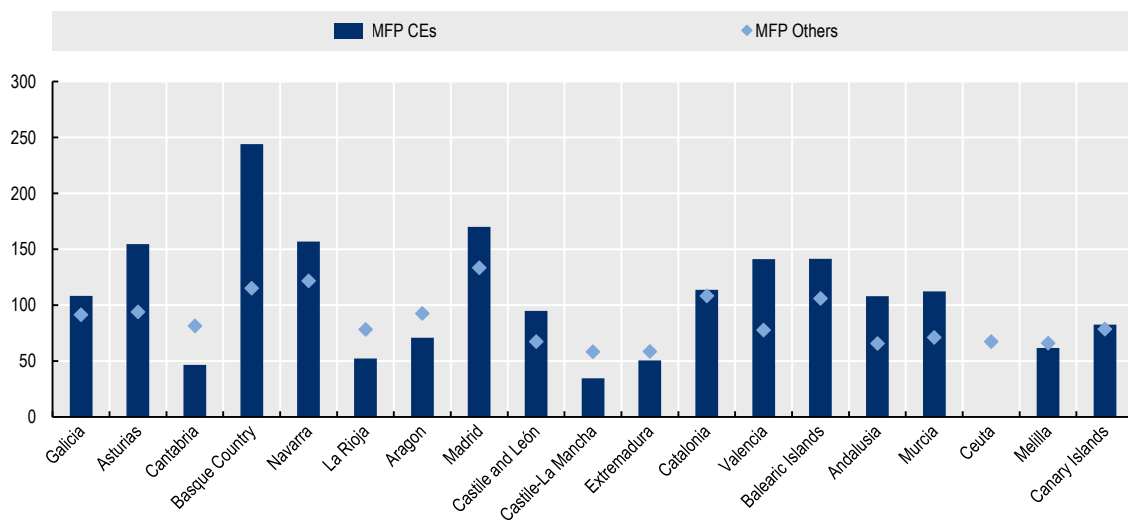
²³ The dynamics of strong convergence is extremely unique, as firm-level productivity performance tends to diverge greatly (see, for example, Berlingieri, Blanchenay and Criscuolo (2017_[73]) and Andrews, Criscuolo and Gal (2016_[39]). The indicated pattern is not due to a reduction in the number of firms or employment in the underlying data. In fact, both the number of co-operatives and their total employment increased during the period.

4.2.2. Productivity by region

The average MFP of co-operatives in Spain varies substantially by region. Taking the 2017 average productivity of non-Basque co-operatives as 100, the average regional performance ranged from 35% (Castile-La Mancha) to 244% (Basque Country) of the benchmark (Figure 4.3). In regions accounting for the largest part of the national co-operative employment (Basque Country, Valencia, Andalusia, Catalonia, Murcia and Madrid), co-operatives are notably more productive compared to other firms.

Figure 4.3. Spanish co-operatives tend to be more productive than other firms, with the largest difference in the Basque Country

Index: The mean 2017 value of Multi-Factor Productivity (MFP) of non-Basque co-operatives in 2005 constant euros=100.



Source: OECD calculations based on Orbis.

Box 12. The special case of co-operatives in the Basque Country

The Spanish co-operative movement arose in the nineteenth century, when several influential regional organisations were set up. A nationwide federation was established at the end of the 1920s, but the co-operative movement was hit hard by the Spanish Civil War.

Nowadays, Spain is famous for its unique co-operative experience, Mondragón, from the name of a Basque town where the first of many co-operatives (Fagor Electrodomésticos, producing paraffin heaters) was founded in 1956. By the end of the 1960s, Mondragón co-ops amounted to 41. The original nucleus grew with the creation of a polytechnic school in 1962 and a research centre in 1974, both incorporated into the University of Mondragón in 1997. In 1984, a group governed by a congress was set up, which linked the consortia of co-operatives together.

As early as 1991, this organisation gave way to a new structure, Mondragón Cooperative Corporation (MCC), based on product group divisions, with central departments responsible for common issues such as finance, innovation, internationalisation, and co-operative identity. Such renewed structure helped Mondragón to cope with the opportunities and challenges posed by globalisation.

Despite its undeniable success, the Mondragón group remains concentrated in the Basque Country, where it accounts for a significant amount of local output and is one of the main job providers. Moreover, no Mondragón foreign subsidiary has been converted into a co-op or has comprehensively introduced the cooperative model's practices, attesting that co-operative models rely on local conditions and the expansion of activities overseas does not necessarily entail their replication abroad. After playing a key role in the creation of the Mondragón co-operative experience, Fagor became a multinational corporation competing in the household appliances market in the 1990s, but it eventually went bankrupt in 2016, calling at stake the general question of the viability of workers' co-operatives.

However, the Mondragón group still counts over one hundred co-operatives and continues to exhibit a strong capacity for growth and long-term survival. In fact, according to the World Co-operative Monitor produced by the International Co-operative Alliance and Euricse, MCC still ranks at the top of the largest industrial co-operative enterprises in the world. Mondragón co-operatives operate in accordance with the Statement on the Co-operative Identity maintained by the International Co-operative Alliance.

Source: (Zamagni, 2017^[5]) (Errasti, Bretos and Nunez, 2017^[66]) (Bretos and Errasti, 2018^[67])

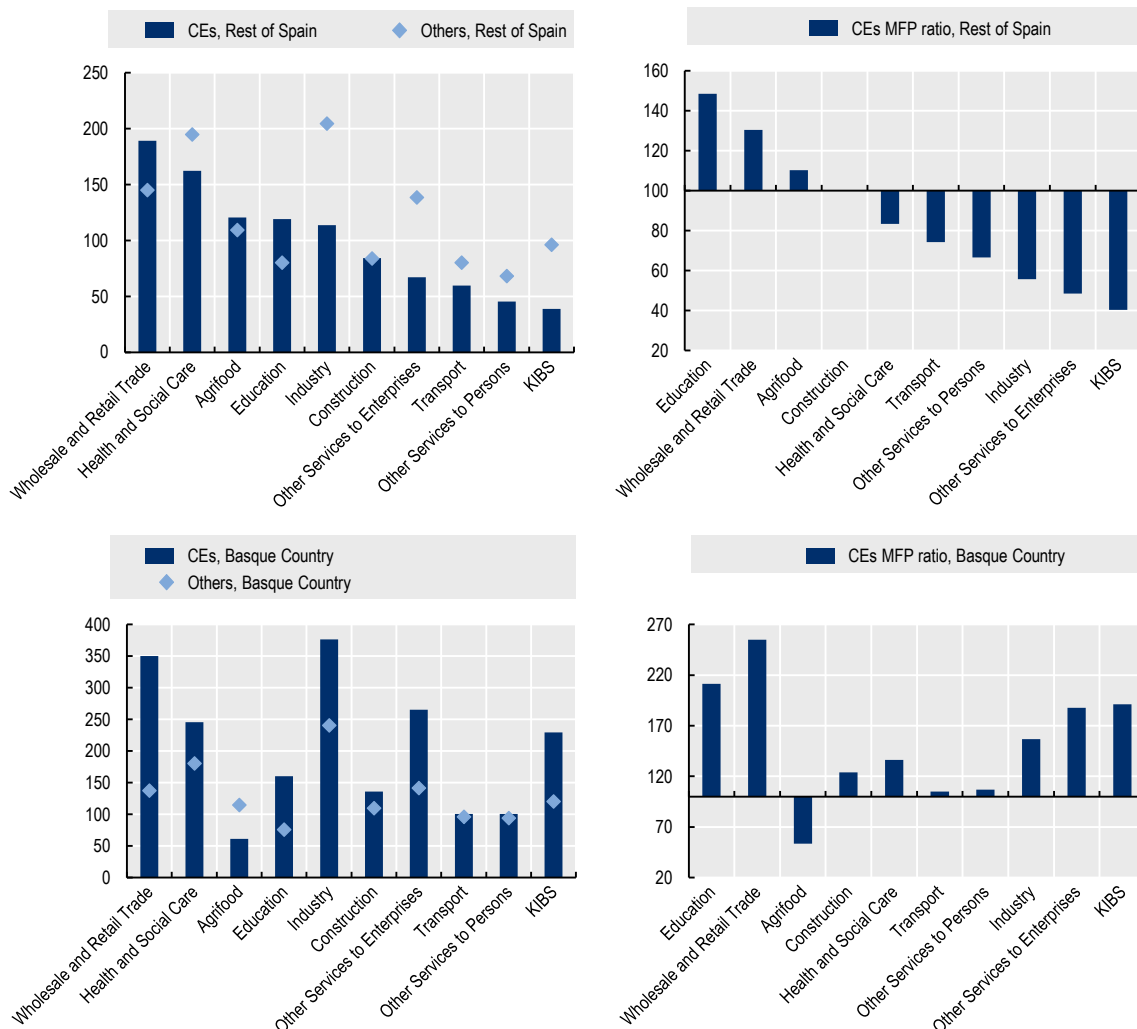
4.2.3. Sectoral perspective

Despite quite high average productivity of the Spanish co-operatives compared to other firms, co-operative productivity performance differs markedly across industrial sectors (Figure 4.4). Using average productivity of co-operatives located outside of the Basque Country as 100, the productivity index of non-Basque co-operatives in 2017 ranged from 39% to 190% of the benchmark. Only in three sectors out of 10 (Wholesale and Retail Trade, Agrifood, Education) non-Basque co-operatives were more productive than other firms. In Construction, productivity was equal.

The productivity distribution across industrial sectors is very different in the Basque Country (lower two panels of Figure 4.4). Only in Agrifood do private companies appear more productive than co-operative enterprises. In all other sectors, including Industry and KIBS (two sectors where co-operatives underperform both in the rest of Spain and in Italy), Basque co-operatives are more productive than other enterprises.

Figure 4.4. Non-Basque co-operatives outperform other Spanish firms in Education, Trade and Agrifood; Basque co-operatives are more productive in all sectors, except for Agrifood

Index: The 2017 average value of MFP for non-Basque co-operatives in 2005 constant euros=100 (left panels); ratio of average productivity in co-operatives to average productivity in non-co-operatives multiplied by 100 (right panels).



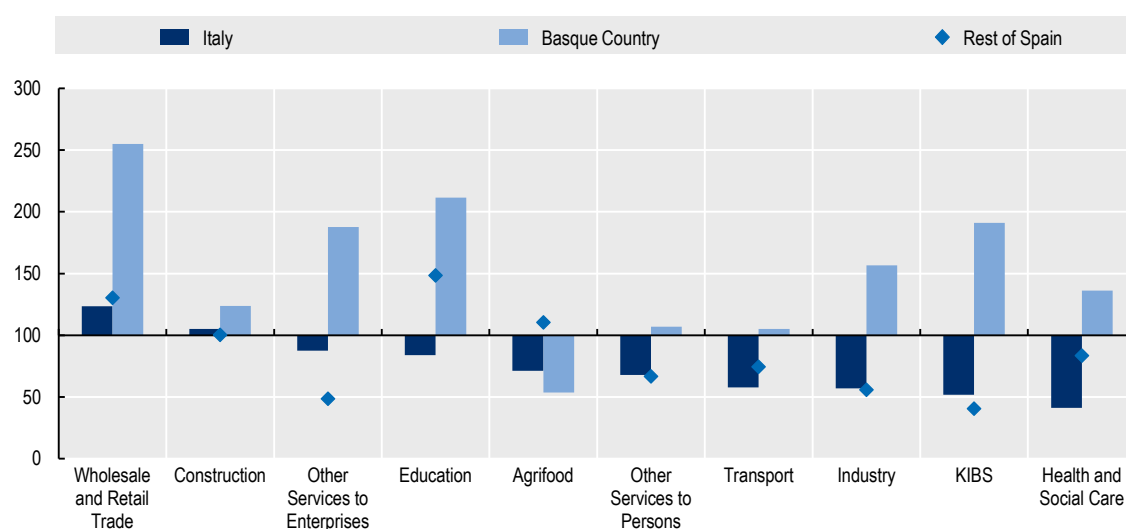
Note: Data for 2017. Industrial sectors are ordered by the MFP index in non-Basque co-operative enterprises (left panels) and by the ratio outside of Basque Country (right panels).

Source: OECD calculations based on Orbis.

Figure 4.5 shows indexes of productivity performance for Italian co-operative enterprises, co-operatives in the Basque Country and Spanish co-operatives located outside of the Basque Country. The index is constructed by dividing the value of MFP for the given group of co-operatives to the corresponding group of private companies (in all Italy, in the Basque Country and outside of the Basque Country, respectively). The value added of this figure is that it shows how co-operatives outperform other firms in nine out of ten sectors in the Basque Country, in four sectors in the rest of Spain and in two sectors in Italy. Wholesale and Retail Trade and Constructions are the only sectors where co-operatives outperform other firms both in Italy and Spain, including the Basque Country.

Figure 4.5. Co-operatives in Basque Country, rest of Spain and Italy each outperform other firms in a different combination of sectors

Ratio of average productivity of co-operatives (CEs for Italy) to average productivity of non-co-operatives in corresponding territory multiplied by 100.



Notes: Data for 2017. Industrial sectors are ordered by the ratio for Italian CEs (SCs are not taken into account).
Source: OECD calculations based on Orbis.

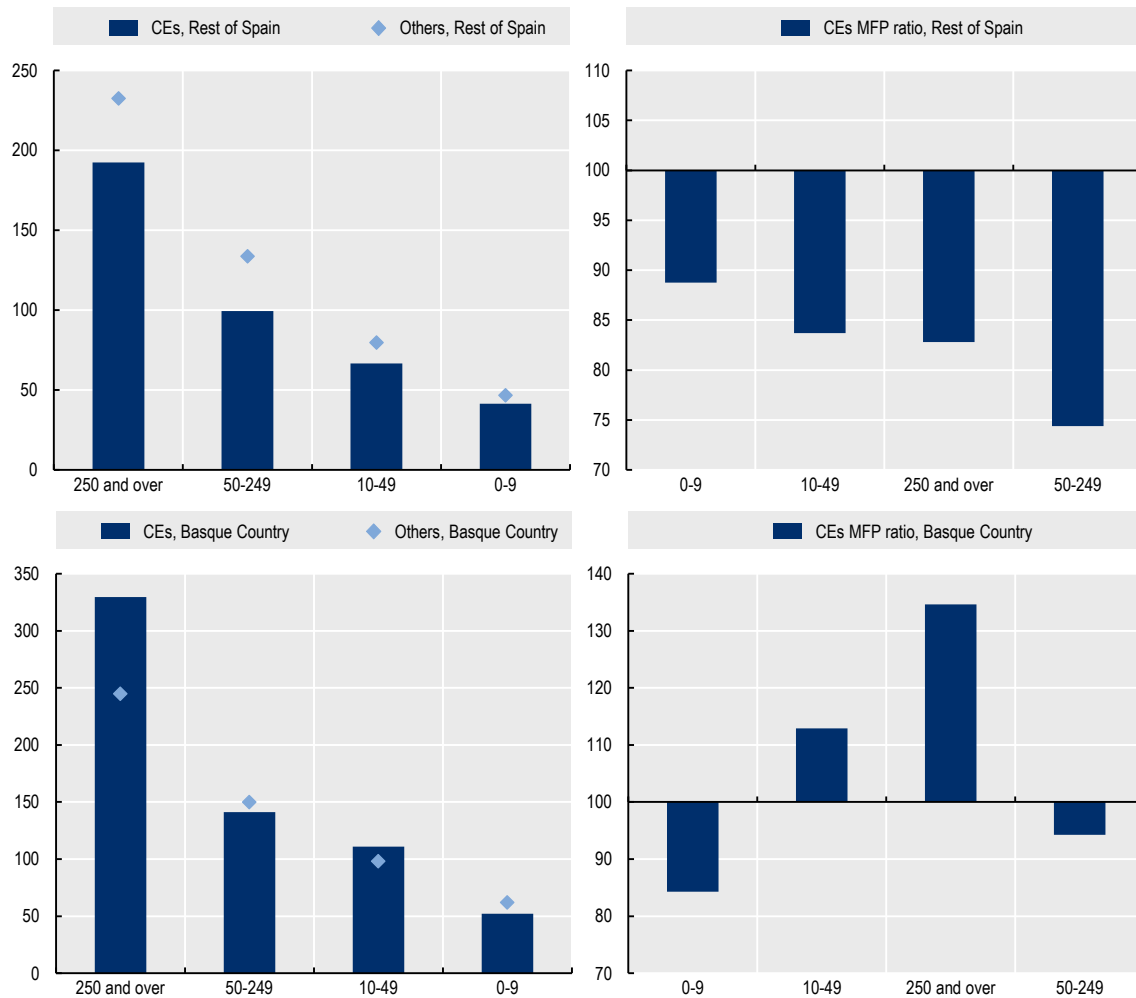
4.2.4. Productivity and firm size

Similar to Italy, productivity of Spanish co-operatives (and of other firms) is strongly related to enterprise size. Larger co-operatives are considerably more productive than smaller ones (Figure 4.6). Outside of the Basque Country, when enterprises are broken by size class, the productivity index declines smoothly with size, and co-operatives tend to be less productive than other firms of corresponding size. The productivity differential between co-operatives and other firms outside of the Basque Country is the largest for companies with 50-249 workers and the smallest for micro enterprises.

The case of Basque Country (lower panels of Figure 4.6) is very different. While the consistent relationship between size and productivity is clearly observed, the largest co-operatives (250+ workers) are considerably more productive than large non-co-operative enterprises. Small co-operatives (with 10-49 workers) also outstrip small non-co-operative enterprises.

Figure 4.6. Productivity of co-operatives and other firms increases with size; large Basque co-operatives are the most productive

Index: The 2017 average value of MFP for non-Basque co-operatives in 2005 constant euros=100 (left panels); ratio of average productivity in co-operatives to average productivity in non-co-operatives multiplied by 100 (right panels).



Note: Data for 2017. Size classes are ordered by the MFP index in non-Basque co-operative enterprises (right panels) and the ratio outside of Basque Country (right panels).

Source: OECD calculations based on Orbis.

5. Policy recommendations

Policy recommendations draw from the wealth of empirical evidence analysed throughout the report and revolve around four areas, i.e. data, awareness, governance and instruments, making up a single package aimed at enhancing the productivity of co-operatives as well as their overall economic and social impact.

5.1. From data to policy: enhancing the impact of co-operatives

Empirical analysis conducted throughout the report provides a wealth of information on the prevalence and productivity performance of Italian co-operatives across regions, sectors and size classes. Thus, they shed light on the major role of co-operatives in national employment, and demonstrate how the interplay of firm-level characteristics and subnational factors, both of which can be targeted by public policy, results in a highly diversified picture under several performance indicators, unveiling an untapped potential.

However, research conducted for the purpose of this report has not only generated empirical evidence on productivity in the narrow sense, but has also expanded the body of knowledge in a wide range of areas relevant to co-operatives, allowing for a comprehensive policy approach.

Drawing from such evidence, the following recommendations aim to:

- Nurture an evidence-based approach to future policy efforts aimed at co-operatives (*Data*);
- Enhance public awareness of co-operatives' contribution to economic and social development as well as on the nexus between productivity and social impact (*Awareness*);
- Promote institutional co-operation and multi-stakeholder dialogue as a precondition for designing and implementing effective policies for co-operatives (*Governance*);
- Inform the design of policy tools to support co-operatives in weathering the aftermath of the crisis and improving their productivity performance over the long term (*Instruments*).

The four dimensions mentioned above are profoundly interlinked, and several policy recommendations are situated at the intersection of two or more dimensions: therefore, they should be considered as being part of a single package.

5.2. Policy recommendations

5.2.1. Data: expanding the evidence base on co-operatives and their key performance indicators, including productivity

Background

Italy is at the forefront of the global co-operative economy, which will provide a major contribution to “building back better” in the aftermath of the pandemic. The size (in terms of employment numbers) and diversity (in activities across many sectors) of Italy’s co-operatives are often cited as an example across the world. Yet, for other countries to learn from the Italian experience, the availability of and open access to diverse and reliable quantitative data sources, allowing for analysis both at national and subnational level, is crucial. More extensive and usable data would help to better understand the processes within co-operatives and the ways they impact on and interact with their host localities.

As discussed in Annex A, Orbis data ensure a fair coverage of Italian co-operatives, allowing for statistically reliable measurements of productivity and sound comparisons with non-co-operative firms under various perspectives, if combined with national labour datasets, such as INPS.

Yet, it is well known that Orbis tends to under-represent micro and small firms. This under-representation may affect estimates on average productivity between regions and sectors. While for Italy it is possible to carefully assess the representativeness of Orbis by using administrative data on the full population of firms, this is not necessarily the case for all OECD member states. Moreover, Orbis has its own limitations, such as reduced information on the worker base (i.e. lack of data on skills and full-time employment), incomplete information on multi-location firms, and no information on investments. Despite recent progress towards a unified statistical framework at the international level and the presence of advanced empirical work with a global reach, measuring the economic performance of co-operatives remains a major challenge, and data availability allowing for cross-country analysis is still an open issue.

Future research on co-operatives could make the most of the Italian business register, an administrative source that was fully digitised in 1996 and provides a granular picture of the legal position of each company located in the country, constituting a key archive for drawing up economic and business trends. Crucially, business registers provide real-time data, an utmost necessity for policy makers in times of shocks such as the pandemic.

The Movimprese report series issued by the Italian chambers of commerce on a quarterly basis attests to the potential of the business register as an effective tool for monitoring business demography. Nonetheless, co-operatives are not monitored as a self-standing legal type in this series, preventing public awareness even of basic figures, such as their current number.²⁴

Data stemming from “statutory audits” (*revisioni ordinarie*) may represent another useful source of information for refining productivity measurements on co-operatives. The Italian legislation foresees statutory audits on a rolling basis to ensure the fulfilment of co-operative requirements, of which the most important being prevailing mutualism. This means that, in order for co-operatives to be eligible for fiscal and other incentives, business operations should involve and benefit members for the most part. Audits take into account all administrative sources related to co-operatives’ business life. Hence, audit reports contain a large amount of critical information, including quantitative data of great interest to researchers, such as evidence of labour costs, which potentially allow for wage estimates, and of patronage refunds (i.e. periodic payments of surplus profit back to members), which allow for more refined measurements of labour productivity.

²⁴ See the Movimprese reporting system: <https://www.infocamere.it/movimprese>

Although data stemming from audit reports carried out by central public administrators are digitised and merged into a single database, there is no periodic reporting system using such evidence base for public communication, research or policy design purposes. In other words, data from audit reports represent an untapped resource that, if duly mobilised, could contribute to informing policy actions aimed at co-operatives.

Ideally, all audit data could be stored in a single online database, as opposed to current fragmentation. At present, the Ministry of Economic Development and a few other national partner administrations are in charge of auditing co-operatives that are not part of a major national co-operative federation, as well as those that are located in regions with ordinary statute (as opposed to those with special statute, which follow internal procedures, although few exceptions apply in both cases). At the same time, national federations are entitled to conduct audits for member co-operatives.²⁵ Currently, there is no mechanism allowing for the creation of a single, national audit dataset usable for research purposes.

Lastly, another opportunity for improving the evidence base relates to of the need to align data from the national register of co-operatives (*albo delle cooperative*) with that of the Italian business register. The former source is managed by the Italian Ministry of Economic Development and is publicly accessible without costs. Subscription to it is a requirement provided for by the law for new co-operatives to start operations, therefore its main value is public notification. However, no mechanism is in place to ensure that co-operatives that end operations are marked as such. As a result, the *albo* currently displays around 112 000 entries,²⁶ against around 72 000 co-operatives in operations as per the Italian business register.²⁷ The latter covers all Italian firms, including co-operatives, which submit their business documentation to it (e.g. balance sheets) on a regular basis. Chambers of commerce manage the business register in a centralised way and fees must be paid to access the data. Recently, a legal provision has been introduced to streamline the flow of information between the two organisations that manage the registers,²⁸ but statistical discrepancies are still an open issue. As a result, the *albo* cannot yet be used as a reliable source for research purposes in its own right, because it does not distinguish between active co-operatives and those that are no longer in operation.

Recommendations

- Intensify efforts to expand the evidence base on co-operatives, allowing for a more extensive analysis of their economic and social impact as well as for more refined measurements of firm-level key performance indicators.
- Promote initiatives by specialised research institutions to set up a unified statistical framework at international level to measure the co-operative economy, enhancing the reliability of cross-country comparative analysis.
- Continue to foster expert discussions on methodologies and techniques to measure the productivity of co-operatives, and link this work to existing efforts aimed at assessing social impact,²⁹ to establish a comprehensive theoretical framework reflecting their two-sided nature, i.e. economic and social.

²⁵ See: <https://www.mise.gov.it/index.php/it/component/content/article?id=2012036:vigilanza> (lastly accessed on 7 December 2020)

²⁶ See: <http://dati.mise.gov.it/index.php/lista-cooperative> (lastly accessed on 3 December 2020)

²⁷ This piece of information was provided on request by the Italian Ministry of Economic Development.

²⁸ See decree-law no. 76 of 2020, art 40: <https://www.gazzettaufficiale.it/eli/id/2020/07/16/20G00096/sg>

²⁹ See, for instance, the decree of the Minister of Labour and Social Policies of 23 July 2019, providing guidelines for the implementation of social impact assessments for third sector organisations, which include social enterprises and social co-operatives: <https://www.lavoro.gov.it/documenti-e-norme/normative/Documents/2019/DM-23072019-Linee-guida-realizzazione-sistemi-valutazione-impatto-sociale-attivita-svolte-dagli-ETS.pdf>

- Further support the efforts aimed at streamlining information flows between the national register of co-operatives (*albo delle cooperative*) and the business registry, and encourage horizontal coordination between their managing institutions, i.e. the Italian Ministry of Economic Development and the chambers of commerce respectively, including to facilitate general-interest data analysis and research.
- Consider issuing national monitoring reports or integrating existing ones (e.g. Movimpres) by using available datasets, to raise public awareness and spread evidence-based knowledge on co-operatives and their key trends, such as changes in co-operative registration trends after the pandemic.
- Unify and unlock data from audit reports, allowing researchers to access key information such as wages, revenues and patronage refunds, in compliance with disclosure requirements.
- Create an open database of public contracts involving co-operatives, allowing for research on the matter, to shed light on the share of co-operative revenues stemming from public demand and their distribution across sectors and regions.

5.2.2. Awareness: strengthening action to raise public awareness of the economic and social value of co-operatives and how enhanced productivity could amplify their impact

Background

Academic literature on co-operatives and the social economy in the broadest sense places great emphasis on social impact. Co-operatives have an intrinsic economic rationale, which is closely interdependent with social impact considerations. Productivity is a critical performance indicator at the firm level, which could support the analysis of the links between the economic and social contributions of cooperatives.

The major role of co-operatives in economic development needs to be better disseminated across society, including in Italy where they account for a sizeable share of national employment (notably among disadvantaged groups), and play a demonstrated role in mitigating the repercussions of crises.

The international research community acknowledges the potential role of co-operatives in “building back better”, i.e. repurposing socio-economic development models, in the aftermath of the pandemic, making a case for enhanced public awareness of the matter.

Lastly, research conducted for the purposes of this report showed the lack of easily available information on policies and incentives specifically targeting co-operatives.

Recommendations

- Raise public awareness about co-operatives’ intrinsic economic value: indeed, social economy organisations, and notably co-operatives, are a major economic player, and evidence shows that their productivity performance outdoes non-cooperative firms in several sectors and regions of Italy (the Spanish case study confirms this finding).
- Encourage a stronger narrative among co-operative practitioners and associations stressing the crucial nexus between productivity, regional development and social impact: productivity is key to ensure that co-operatives continue delivering social impact at local level over the long term. Pursuing productivity and social impact are not opposing objectives. Indeed, various co-operative models may be more efficient and outperform traditional private sector organisational forms.
- Highlight co-operatives’ major contribution to employment and resilience in times of crisis and with particular regard to their beneficial effects for disadvantaged groups, encouraging other firms to engage with co-operatives and adopt co-operative socially responsible practices and principles.
- Include co-operatives in the broader discourse on Italy’s pathway towards the achievement of Sustainable Development Goals.

- Promote a collection of and foster access to information on national, regional and local policies, incentives and institutional practices specifically devoted to the co-operative economy.
- Ensure that support measures generically aimed to SMEs are accessible for small- and medium-sized co-operatives by design, removing legal barriers or other hindrances, such as information asymmetries and segmentation in policy dissemination, unless there is a clear rationale against their inclusion, and bearing in mind that co-operatives make up a highly diversified group. For example, current fiscal incentives for firms listing on a stock exchange³⁰ cannot apply for co-operatives adopting the form of limited liability companies, but those established as joint-stock companies³¹, albeit a minority, could still qualify as beneficiaries – a still rare occurrence to date.³²

5.2.3. Governance: fostering co-operation between relevant institutions and multi-stakeholder dialogue to prepare the ground for targeted policies

Background

Interviews with civil servants and other stakeholders conducted for the purposes of this report suggest room for improvement in fostering horizontal coordination between the various bodies responsible for co-operatives, including within the Italian Ministry of Economic Development, where three different directorate-generals (DGs) deal with co-operatives. The DG for Industrial Policy, Innovation and SMEs is responsible for promoting the co-operative sector.³³ The DG for the Supervision of Co-operatives, other Enterprises and the Chambers of Commerce superintends auditing procedures of co-operatives and manages the register of co-operatives (*albo delle cooperative*).³⁴ Lastly, the DG for Business Incentives is responsible for a number of funding programmes for enterprises, including co-operatives, such as the “*Nuova Marcora*” scheme (Section 1.4).³⁵

According to interviewees, coordination between the three-abovementioned institutional bodies does not happen on a continuous basis, and each of them maintains separate discussions and networks with co-operative representatives and other stakeholders based on the respective field of competence.

Beyond within-ministry coordination, policies aimed at the co-operative sector could significantly benefit from an expanded evidence base, a precondition for which is acknowledging the importance of data and unlocking available data sources, such as the Italian business register, by enhancing the collaboration with the chambers of commerce (Section 5.2.1). In fact, business registers can make a decisive contribution to meeting emerging data needs for both regular statistical production releases and for specific questions asked by policy makers (Ryan, Thompson and Jones, 2020_[68]).

National Productivity Boards are independent bodies that help to analyse economic productivity and competitiveness developments and challenges. All euro area countries are invited to set them up, while

³⁰ See: <https://www.mise.gov.it/index.php/it/incentivi/impresa/credito-d-imposta-quotazione-pmi>

³¹ See Legacoop Emilia-Romagna manual on co-operative forms (2010 edition): http://www.legacoop.re.it/allegati/ManualeCooperativa2001English_100930051706.pdf

³² See: <https://www.borsaitaliana.it/homepage/homepage.htm>

³³ See Italian Ministry of Economic Development web site: <https://www.mise.gov.it/index.php/it/component/organigram/?view=structure&id=13>

³⁴ See Italian Ministry of Economic Development web site: <https://www.mise.gov.it/index.php/it/component/organigram/?view=structure&id=14>

³⁵ See Italian Ministry of Economic Development web site: <https://www.mise.gov.it/index.php/it/component/organigram/?view=structure&id=20>

other EU countries are encouraged to do so.³⁶ To date, Italy has not yet established such a board,³⁷ in spite of the fact that productivity is widely acknowledged as the main factor holding back long-term economic growth in the country (Bugamelli et al., 2018^[69]).

Recommendations

- Embrace a cross-cutting policy approach towards co-operatives' development, combining promotion, auditing and financing, through enhanced inter-departmental coordination at Ministry level.
- Consult with representatives of the co-operative ecosystem and the social economy at large on a running basis, to ensure that bespoke policy measures are put in place and broader SME and entrepreneurship policies are inclusive for any type of business, regardless of legal structure. Dialogue with national co-operative federations was instrumental, for instance, in removing the regulatory barriers that prevented co-operatives from taking full advantage of a major fiscal incentive for the purchase of capital goods. The first setting of this incentive, part of the national plan for the digitalisation of Italian firms, foresaw a heightened depreciation rate for investments in capital goods, allowing for a significant decrease of purchase costs for equipment, digital in particular. Structural differences in factor payments compared to other firms resulted de facto in a shorter depreciation period for co-operatives and, therefore, a lower tax benefit compared to other firms the investment being equal. After consultations between the Italian government and the national business associations, including co-operative representatives,³⁸ the incentive has been turned into a tax credit since 2020, ensuring an equal treatment of all firms irrespective of their legal form.
- Consider revamping the role of co-operative auditors appointed by central government, from mere enforcers of legal provisions to network enablers who can transfer quality information on national policies, practices and incentives to local communities, and bring hands-on information upwards. The rethinking of tasks and objectives would go hand in hand with carefully revising training modules, performance indicators and remuneration schemes.
- Build momentum around the crucial issue of productivity, with reference to the co-operative sector but not necessarily limited to it, and consider establishing a National Productivity Board to pivot policy-purposed research on the matter.
- Foster a multi-stakeholder discussion involving representatives of the national association of the chambers of commerce, business associations and academia on the potential role and settings of the business register for policy making purposes.
- Ensure coordination across different levels of governance on co-operative issues, making the most of regions' legislative power and EU financial resources mainly from the European Social Fund and the European Regional Development Fund.

5.2.4. Instruments: devising fit-for-purpose policy tools to make co-operatives more resilient and productive

Background

The analysis of productivity indicators suggests that the average productivity of co-operatives varies greatly across the Italian economy. In some regions and sectors, it exceeds the productivity of non-co-operative

³⁶ See Council Recommendation of 20 September 2016 on the establishment of National Productivity Boards: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016H0924%2801%29>

³⁷ See National Productivity Boards webpage, EU Commission: https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/national-productivity-boards_de (lastly accessed on 3 December 2020)

³⁸ ACI web site: <https://www.alleanzacooperative.it/l-alleanza/digitalizzazione-ed-economia-circolare-nelle-imprese-cooperative-il-12-aprile-evento-organizzato-dal-mise.html>.

enterprises, whereas in most it does not. Similar to other firms, productivity increases with size. Yet, the underperformance compared to other firms also tends to increase in larger size classes.

Differences in co-operative productivity across provinces correlate to local factors in a similar way as other firms. For example, both co-operatives and other firms are on average more productive in regions with lower levels of corruption, with better quality of government and in those that are more innovative and internationally connected. This evidence indicates that policy recommendations to improve the overall business environment, including skills development, physical and digital infrastructure, as well as the efficiency of local governments, will benefit co-operative firms too.

Literature demonstrates that innovation and digitalisation are crucial determinants of productivity at firm level (OECD, 2021^[70]). The average productivity of co-operatives is higher in regions where more co-operatives are engaged in innovation and digital. Evidence has shown that the pandemic was a forceful trigger of innovative activities among Italian co-operatives: many of them switched to teleworking, adopted new technologies and new ways of communication. Yet, costs and shortages in skills, absorptive capacity and digital infrastructure hinder the ability of co-operatives to improve their digital performance, and advanced technologies are still not utilised by most of them. Innovation patterns and the related barriers show clear geographical variation among Italian co-operatives.

While sales revenues are the main source of income for many co-operatives, others predominantly rely on public contracts. The latter group may be more exposed to shrinking public budgets in the coming years, when highly indebted governments could face the necessity to cut costs, calling for a new approach to public procurement.

Rewarding the participation of socially responsible enterprises in public procurement, including at local level, may be an effective way to boost the co-operative economy, foster its industrial diversification and spread its practices and values across the economy at large. An example in this sense is the decree for socially responsible procurement enacted by the City of Barcelona in 2013. Its aim is to use public procurement to create work opportunities for the most vulnerable members of society and thus improve social cohesion, foster collaboration among different industries and develop the social sector. A key component of this initiative is the setup of the Mixed Commission for Social Responsible Procurement, gathering more than 50 stakeholders from civil society, corporate, and social economy organisations, along with civil servants. The Commission ensures that procurement is technically sound and captures the interests and specificities of all stakeholders (OECD, 2017^[71]).

Finally, as bankruptcies are expected to rise in the aftermath of the pandemic, employee buyouts (i.e. workers taking over the ownership and control of a company, typically in the context of a corporate crisis), may gain in importance to preserve employment and avoid asset depletion.

Recommendations

- Review instruments and incentives to spur co-operatives' growth, with a focus on less-developed regions, where co-operatives are more numerous in proportion to population but smaller on average, in order to increase productivity along with size.
- Consider incentivising mission-oriented consortia between co-operatives and other firms as an alternative to pursuing growth at firm level when this cannot be achieved. Consortia and similar solutions, such as network contracts, can help co-operatives to achieve a substantial scale without an important mass of employees or other tangible assets. They can be aimed, among other things, at improving internationalisation performance, a major weakness of the co-operative sector according to international literature, as well as digitalisation.
- Create an enabling fiscal and regulatory environment for employee buyouts to constitute a viable solution for preventing job and asset destruction.

- Make sure that co-operatives and their managers are aware and make the most of the range of incentives making up the national plan for the digitalisation of Italian firms, recently renamed “Transition 4.0”, as well as of regional incentives for digitalisation.
- Unlock firm-level productivity-enabling factors, notably digitalisation, by enhancing co-operative capacities on the ground (i.e. skills, equipment, infrastructure, etc.), with a focus on advanced digital technologies.
- Make the most of digital desks (*Punti Impresa Digitale*) established by the Italian chambers of commerce and other similar bodies (e.g. digital innovation hubs, competence centres) whose institutional mission is to assess firms’ digital readiness, provide training on digital practices and foster technology transfer.
- Build momentum on the importance spatial productivity-enhancing factors, such as the quality of local government, social capital, and fight to corruption, going beyond the mainstream notion that these are an exclusive matter of well-being and social development.
- Foster diversification of revenue sources for co-operatives, to tackle reliance on public demand, by incentivising internationalisation and encouraging business-to-business operations.
- Consider introducing rewards for socially responsible enterprises in public procurement in high-value-added sectors, including at local level, so as to nudge co-operative participation as well as the dissemination of co-operative principles and practices among other contracting firms.
- Design public procurement contracts, particularly those in low-value-added sectors, in a way that discourages competitive pricing and rewards other business strategies and practices, such as social and technological innovation, digitalisation, inclusiveness and sustainability.
- Devote special attention to socially-sensitive sectors where co-operatives make up a significant share of employment and are key to resilience and sustainability, such as health and social care, and consider providing dedicated financial support to cope with disruptive megatrends such as population ageing.

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Annex A. Orbis data and analysis of productivity

What is Orbis, and why use it for productivity estimates?

Orbis is a commercial dataset provided by Bureau van Dijk, which contains firm level data for many countries around the world. Bureau van Dijk relies on various public and commercial sources to collect the information. Since these sources are often not from official administrative databases, Orbis does not include all firms in each country. This means that the dataset contains a sample of all firms, which is potentially non-random. For example, it is widely acknowledged that Orbis tends to underreport micro and small firms. Likewise, short-lived firms are less likely to be recorded in the dataset. While the data coverage (the share of businesses included in Orbis) differs by country, the data for Italy and Spain are the most representative for productivity estimations. In the remainder, we refer to the OECD-Orbis dataset, which is a subset of the full Orbis dataset for Italy. This dataset is cleaned for inconsistencies and only includes firms for which productivity estimates were calculated.

Coverage and representativeness of OECD-Orbis, Italy

To determine how close the OECD-Orbis dataset matches the official data, it is compared to tabulations based on the ASIA dataset from ISTAT. ISTAT tabulations provide information on all firms in Italy (the number of firms and employees by year, geographical area, industrial sector and company size). Crucially, the ASIA dataset also allows to distinguish between co-operatives and other firms. The number of firms, employment and their distributions in the two data sources (OECD-Orbis and ISTAT/ASIA) are compared to determine the usability of the OECD-Orbis database for the analysis of co-operative productivity in Italy.

Box A.1. Identifying Italian co-operatives in OECD-Orbis database

In the OECD-Orbis database co-operatives can be identified according to their legal form. As explained in Section 1.1, this report distinguishes between two main typologies, i.e. co-operative enterprises and social co-operatives. The former include “Consortium of co-operatives”, “Co-operative company with limited liability” (SCARL), “Co-operative company with limited liability by shares” (SCARLPA), “Small co-operative company with limited liability” (SCARL) and “Co-operative company with unlimited liability” (SCARI), whereas social co-operatives are those indicated as “Social co-operative company” in the OECD-Orbis dataset.

Orbis data could be matched against the register of co-operatives (*albo delle cooperative*) managed by the Italian Ministry of Economic Development for controls on legal statuses. While there is great overlap between the two sources, discrepancies are non-negligible. Yet, background analysis found that using the *albo* designation to distinguish between co-operative enterprises, social co-operatives and other firms does not change the findings qualitatively. The reason for the discrepancy is unclear, but may be due to incomplete information in Orbis as well as changed status of existing firms between the time of recording in Orbis and the current published version of the *albo*, which is continuously updated.

One advantage of using the *albo* is the ability to distinguish between various co-operative models, such as production and worker co-operatives, agricultural service/production co-operatives, consumers' co-operatives, etc., as well as between subtypes of social cooperatives, adding a different angle. When matched against the firms observed in Orbis, most of these belong to production and worker, agricultural service/production and social cooperatives, with a much smaller share in the other types. Moreover, agricultural co-operatives concentrate in the agrifood sector definition, while production and worker co-operatives are scattered across the other sectors. Therefore, this report focuses on the sectoral, regional and size distribution of co-operatives, social co-operatives and other firms. Future research could further explore the role of the corporate typologies of private sector firms in relation to the various co-operative models, in line with past approaches (Fakhfakh, Perotin and Gago, 2012^[41]; George, Fontanari and Tortia, 2020^[47]).

The OECD-Orbis dataset offers a good coverage of the Italian economy. Generally, co-operatives are better represented compared to other enterprises. As an example, the OECD-Orbis dataset allows deriving productivity estimates for over 450 000 Italian firms in 2017, which is 10% of all firms in Italy. These firms account for 69% of national employment. While there are differences across legal forms, co-operatives, on average, tend to be better covered. The dataset contains information on 25 420 co-operative enterprises (60% of all CEs in the country) and 3 842 social co-operatives, representing 26% of all social co-operatives. In the following, representativeness of the OECD-Orbis dataset along four dimensions (temporal, regional, sectoral and by size) is assessed by plotting distributions against the official statistics.

Box A.2. Productivity (MFP) estimates and benchmarking

The OECD-Orbis productivity dataset contains firm-level Multi-Factor Productivity (MFP) estimates based on methodology described by Gal (2013_[36]). Productivity estimates of Italian co-operatives using similar data sources and methodology are also reported by George, Fontanari and Tortia (2020_[47]).

In the comparison of co-operative productivity with other firms, firms with employment size greater than the largest co-operative in the same sector are excluded. This ensures that the groups are comparable, as size tends to be strongly correlated with productivity. This exclusion is only done for the estimates of productivity and not for other statistics in this report.

Time dimension

Figure A.1 indicates the distribution of observations for all firms over time for firms in OECD-Orbis and as reported by ISTAT/ASIA. In terms of the number of firms, it is clear that going back in time causes a substantial number of firms to be missing the OECD-Orbis dataset. This is a well-known characteristic of the Orbis data, especially when using data from a single vintage (release), as done for this report. In terms of employment, however, the coverage is more consistent, indicating greater reliability of the OECD-Orbis dataset for analyses involving the number of workers.

Figure A.1. Number of firms and employment by data source and year, all firms in Italy

Fraction of total observations in 2012-2017.



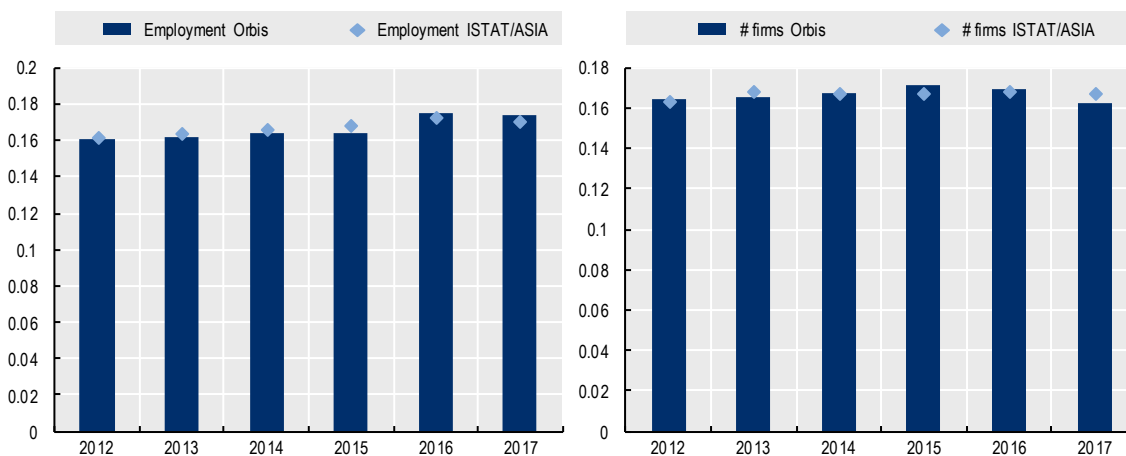
Note: Bars and diamonds sum to one (separately).

Source: OECD calculations based on Orbis and ISTAT/ASIA.

The distributions of the variables (number of firms and employees) become notably closer between the two data sources when the focus is on co-operatives. This indicates a better coverage of co-operatives by Orbis over time. Greater stability of co-operatives relative to all firms, with less establishments and dissolutions for any given year, can partially explain differences in coverage.

Figure A.2. Number of firms and employment by data source and year, Italian co-operatives

Fraction of total observations in 2012-2017.



Note: Bars and diamonds sum to one (separately).

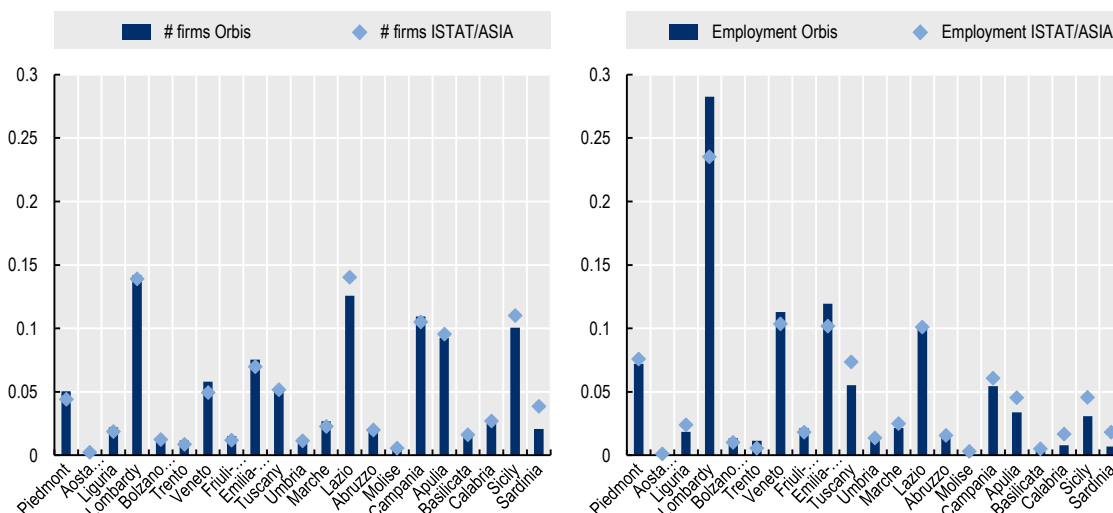
Source: OECD calculations based on Orbis and ISTAT/ASIA.

Regional dimension

Coverage of OECD-Orbis database across regions appears reasonably good for all firms (Figure A.3) as well as for co-operatives (Figure A.4). The distribution of firms and employees in OECD-Orbis follows closely that of the actual situation as represented by the ISTAT/ASIA data with two exceptions. Lombardy, the largest region, appears over-represented in terms of employment for all firms, but this issue reduces for co-operatives. Emilia-Romagna, a region with one of the strongest co-operative sectors in Italy, is well represented in terms of employment for all firms, but co-operatives appear over-represented.

Figure A.3. Number of firms and employment by data source and region, all firms in Italy

Fraction of total observations in 2017.

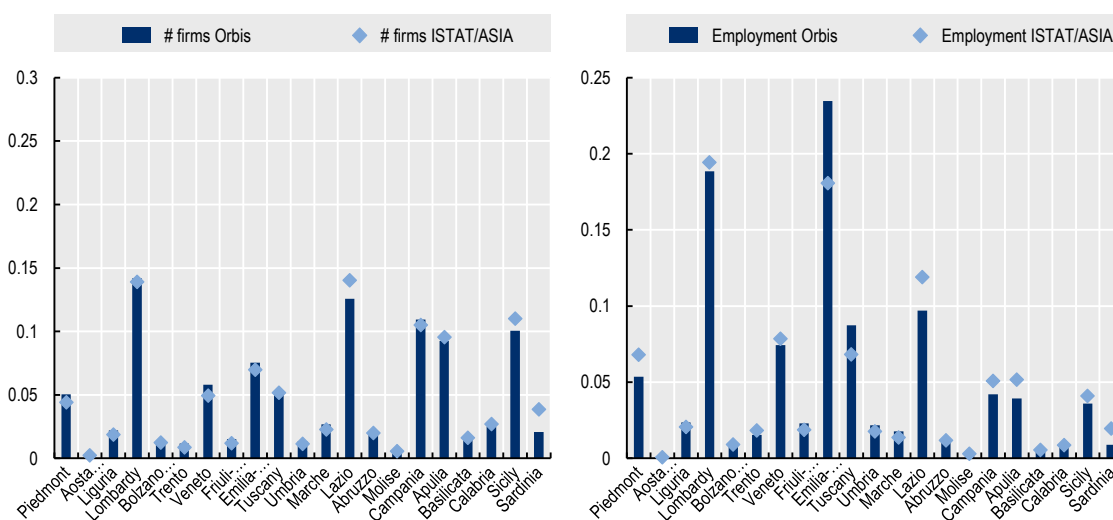


Note: Bars and diamonds sum to one (separately).

Source: OECD calculations based on Orbis and ISTAT/ASIA.

Figure A.4. Number of firms and employment by data source and region, Italian co-operatives

Fraction of total observations in 2017.



Note: Bars and diamonds sum to one (separately).

Source: OECD calculations based on Orbis and ISTAT/ASIA.

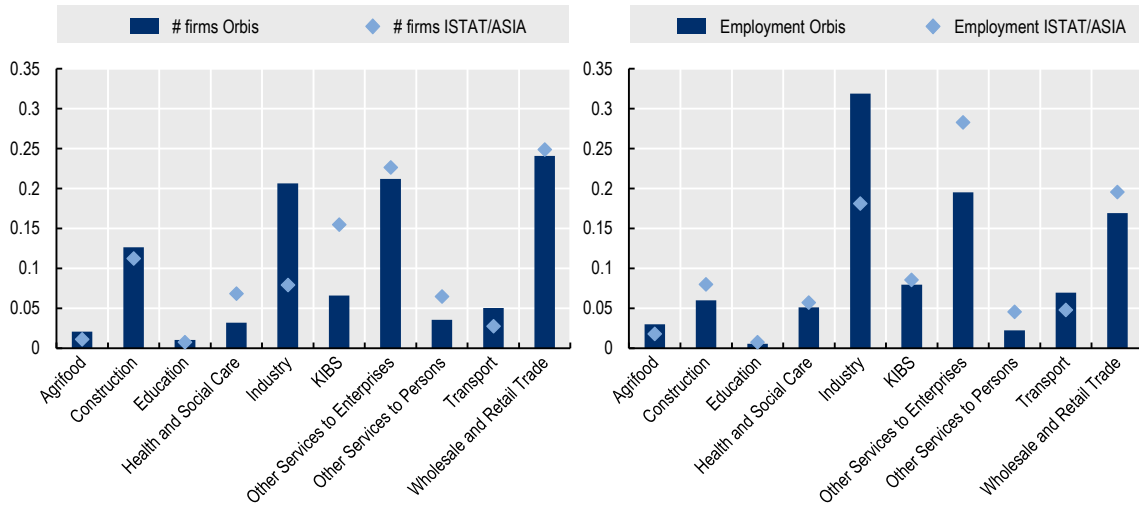
Sectoral dimension

A better coverage of co-operatives (compared to all firms) across industrial sectors³⁹ is evident in Figure A.5 and Figure A.6. The relatively large differences between the two data sources for all firms decrease considerably for the subset of co-operatives. In terms of co-operative employment, the OECD-Orbis data set appears to slightly over-sample Other Services to Enterprises and Wholesale and Retail Trade, and to under-sample Transport.

³⁹ The ISTAT/ASIA data set does not cover agriculture, so the numbers displayed mostly include firms in the Food sector.

Figure A.5. Number of firms and employment by data source and industrial sector, all firms in Italy

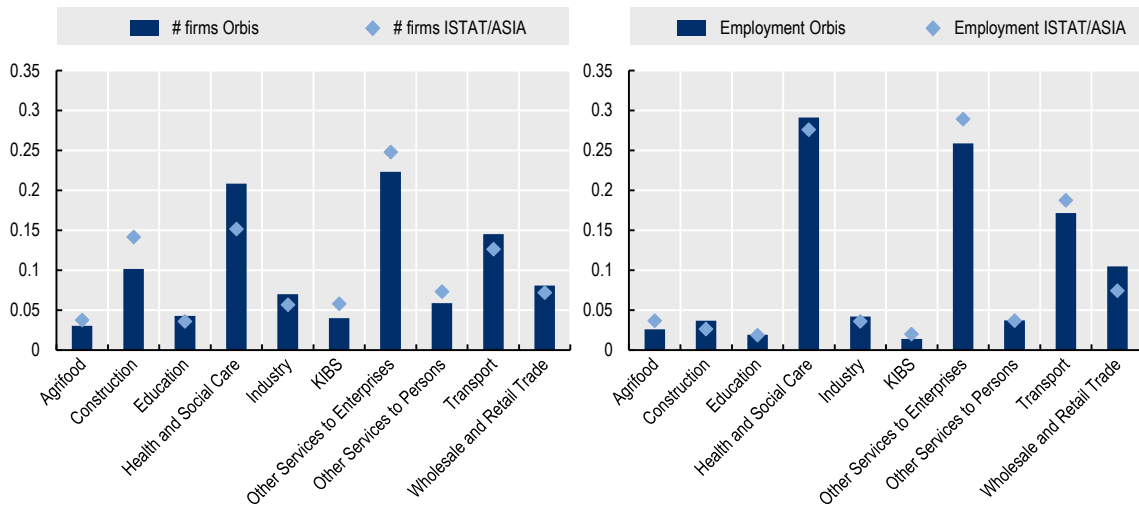
Fraction of total observations in 2017.



Notes: Bars and diamonds sum to one (separately). Sectors are ordered alphabetically.
 Source: OECD calculations based on Orbis and ISTAT/ASIA.

Figure A.6. Number of firms and employment by data source and industrial sector, Italian co-operatives

Fraction of total observations in 2017.



Notes: Bars and diamonds sum to one (separately). Sectors are ordered alphabetically.
 Source: OECD calculations based on Orbis and ISTAT/ASIA.

Size dimension

Across firm size, the OECD-Orbis data also covers co-operatives better, compared to all firms. Orbis is known for underreporting small companies, which is evident in Figure A.7, both in terms of the number of firms and employment counts. For co-operatives, while small ones are underrepresented as well, the

difference between OECD-Orbis and official data is notably smaller, particularly for the number of employees. The distribution of both the number of enterprises and the number of workers follows the official data closer.

Figure A.7. Number of firms and employment by data source and size class, all firms in Italy

Fraction of total observations in 2017.

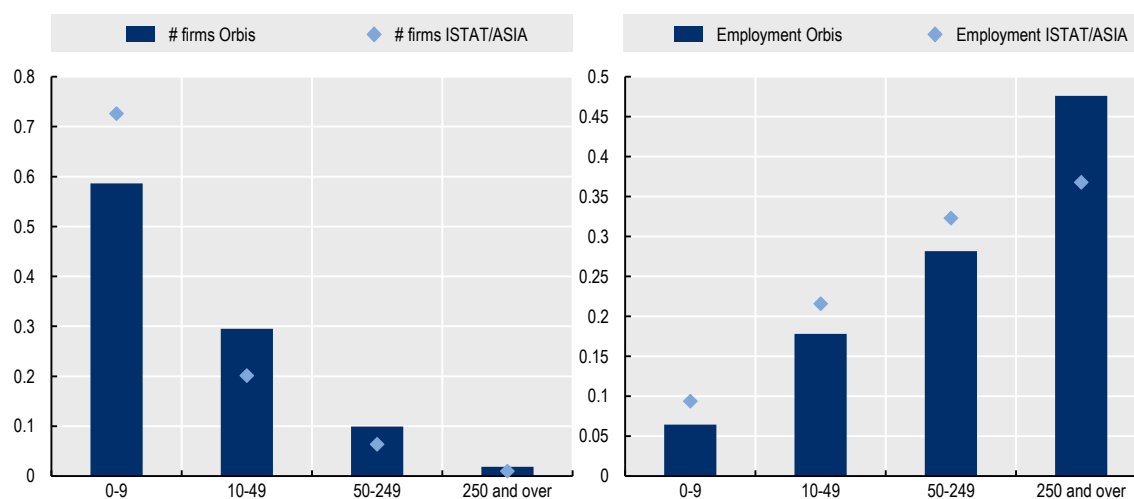


Note: Bars and diamonds sum to one (separately).

Source: OECD calculations based on Orbis and ISTAT/ASIA.

Figure A.8. Number of firms and employment by data source and size class, Italian co-operatives

Fraction of total observations in 2017.



Note: Bars and diamonds sum to one (separately).

Source: OECD calculations based on Orbis and ISTAT/ASIA.

In conclusion, Orbis offers varying coverage of companies located in different regions, belonging to different industrial sectors and size classes. The coverage improves considerably, however, when the

focus is on co-operatives. This points to the suitability of this data source for the analysis of productivity performance of Italian co-operatives.

Coverage and representativeness of OECD-Orbis, Spain

The Spanish Statistics Office (INE) provides data on the number and employment of firms by legal form, including co-operatives, over time and by firm size (but not by sector or region). Co-operatives can be distinguished between agricultural and other co-operatives. The official data are used to assess the coverage of the OECD-Orbis dataset for Spain for both co-operatives and all firms.

Box A.3. Inferring employment counts in Spanish co-operatives from national statistics

Data on co-operative employment can be deducted from at least two INE sources. On the one hand, the Spanish Statistics Office provides data on employment in agricultural and other co-operatives. These numbers suggest that in 2017, there were 5 700 employees in agricultural co-operative firms and 19 500 employees in other co-operative firms. On the other hand, INE offers data on firm counts by firm size group and legal form, which allow deducting the number of co-operative workers. The total employment in co-operatives, according to these calculations, ranges from 177 000 (if the minimum number of employees for each size group is used) to 429 000 employees (if the maximum number for each group is used assuming an upper limit of 16 000 for the size group 5 000+). Additional cross-checks suggest that the real number of employees is likely to be close to the lower limit.

Source: OECD calculations based on INE Table 166-40526, 166-40532 for employees and Tables 27-27, 27-37, 27-47, 27-57, 27-67, 27-77, 27-87, 27-97, 27-107, 27-117, 27-127 for co-operative firm counts by size.

In 2017, OECD-Orbis reports 1 882 co-operatives in Spain compared to 20 656 (of which 6 383 are without employees) reported by INE. This means that the OECD-Orbis dataset identifies about 13% of all co-operative enterprises with employees in the country.

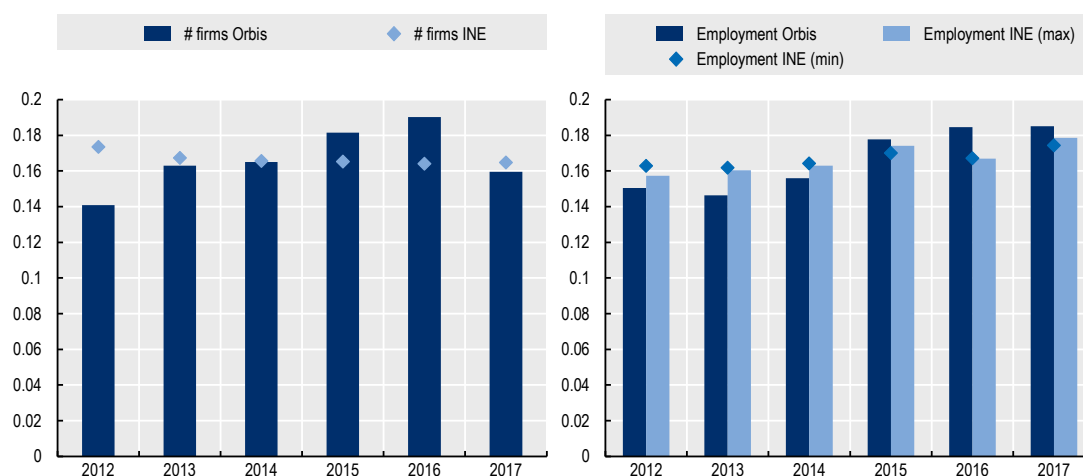
Co-operative employment in OECD-Orbis amounts to about 255 000 people, whereas INE data suggest that this number is between 177 000 and 428 000. In terms of employment, coverage of the OECD-Orbis data is rather high, although this can be partially explained by higher probability for larger firms to be observed in Orbis.

Time dimension

There is some attrition of firms and associated employment when going back in time, an issue commonly known to characterise the Orbis data. In contrast to Italy, such attrition is also observable for the co-operatives in Spain (Figure A.9). This suggests that the Orbis data is better positioned for the study of productivity during the last few years; going back in time beyond this may result in a bias in productivity estimates both for all firms and for co-operatives.

Figure A.9. Number of firms and employment by data source and year, Spanish co-operatives

Fraction of total observations in 2012-2017.



Note: Bars and diamonds sum to one (separately).

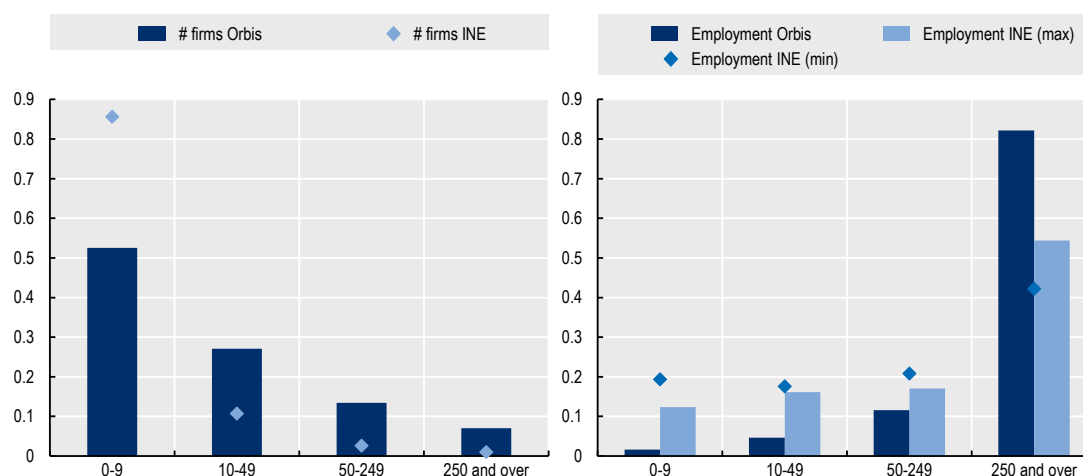
Source: OECD calculations based on Orbis and INE.

Size dimension

The OECD-Orbis data underrepresents micro co-operatives and over-represents small and medium co-operatives (Figure A.10). The underrepresentation of micro-enterprises is partially the result of Orbis not including firms without employees. In Spain, there is a substantial share of co-operative firms that employ zero workers, which are not a part of the OECD-Orbis data set by design. In terms of employment, OECD-Orbis over-samples employment in large co-operatives and under-samples those in smaller size classes.

Figure A.10. Number of firms and employment by data source and size class, Spanish co-operatives

Fraction of total observations in 2017.



Note: Bars and diamonds sum to one (separately).

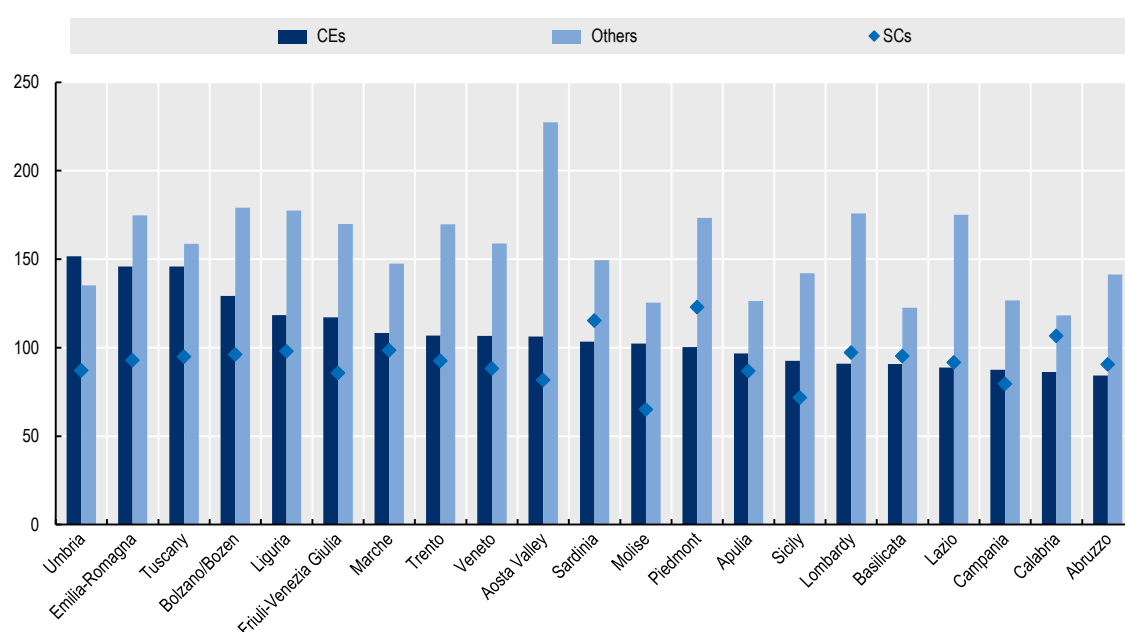
Source: OECD calculations based on Orbis and INE.

Annex B. Further productivity results

In this annex, we present additional results of the productivity estimates by region, sector and size. Section 3.1 presented measurements of each of these dimensions without accounting for the possibility that these may be correlated with each other. For instance, certain sectors that tend to have higher levels of productivity may be spatially concentrated. This would imply that a relatively high level of productivity for such a region is (partially) explained by the spatial distribution of sectors, and not by specific circumstances proper to the region.

In the following, we present for each of the three dimensions the average productivity where the other dimensions are factored out. For instance, the distribution by region presents estimates where the effect of sector and size is filtered out.⁴⁰ For brevity, only the indices are presented, not the ratios relative to “other firms”.

Figure B.1. Average productivity by region, conditioning on sector and size

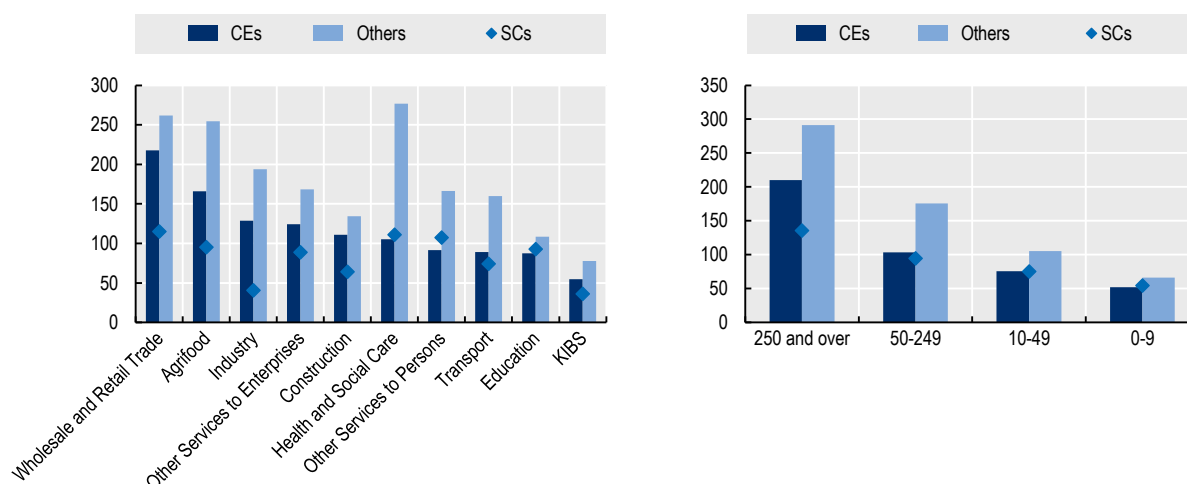


Note: Average productivity based on the residuals of a regression of total factor productivity on indicator variables for firm size and sector.
Source: OECD calculations based on Orbis.

⁴⁰ Technically, this is done by running a regression of total factor productivity on indicator variables with the excluded dimensions. The residuals of this regression are then used to produce the graphs.

Figure B.1 presents the productivity comparison for CEs, SCs and other firms across regions. Relative to the corresponding Figure 3.5 in the main text, the overall ordering of the regions by CEs productivity has changed little. Some regions have swapped places, but by and large the same regions rank towards the top and bottom. Only in Umbria CEs are seen to outperform other firms on average, while Emilia-Romagna and Tuscany no longer do so. There are now also fewer SCs that outperform CEs.

Figure B.2. Average productivity by sector and size, conditioning on region and size/sector



Note: Average productivity based on the residuals of a regression of total factor productivity on indicator variables for firm size and region (left panel), and on indicator variables for sector and region (right panel).

Source: OECD calculations based on Orbis.

Figure B.2 presents the results for sector and size, corresponding to Figure 3.8 and Figure 3.10 in the main text for the left and right panel respectively. The ranking of the sectors is largely unchanged compared to the results in the main text, although a few sectors have swapped places. CEs in Wholesale and Retail Trade no longer outperform other firms. In this regard, one can associate the co-operative trade sector to the large co-operative chains active in this industry, while there are also many small independent stores among other firms, which lower the average productivity for this sector. Therefore, accounting for the size effect discounts the productivity effect ascribed to CEs in Wholesale and Retail Trade. The result for size is practically identical to the main text. This indicates that the size effect of productivity as presented in the main text is not conflated with regional or sectoral effects.