

# NON-FINANCIAL COOPERATIVES THROUGH THE LENS OF FINANCE

Why should they differ from non-cooperatives?

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## 1 Introduction

Finance for non-financial cooperatives is a quite neglected topic in international literature (but the literature on cooperative banks is richer: see Venanzi-Matteucci [2021] for a recent review). Perhaps, an ideological perspective could be the reason: finance is often considered the dark side of capitalism (Palley [2007; 2013]; see Scarano [2023] for a review of a post-Keynesian view on this topic), overtaking real economy by devouring resources, risky and distributionally unequal, oriented to enhance personal capitalists/investors' benefits, emphasizing individualism, self-assertion, competition, and the ultimate cause of crises and defaults. On the other side, cooperative economics ground on sustainability, mutual support, collaboration, and in-group solidarity, superiority of community over individuals/groups. According to the theory of cultural value orientations (Hofstede, 1980; Schwartz, 2006), the first is a symbol of mastery attitude as dominant culture variable, the latter of embeddedness/harmony. However, finance is not bad or good per se: from a normal perspective (once the financial excesses are cleared away: Venanzi, 2012) finance is instrumental to production decisions (and in general to the economic growth), by providing financial resources and supporting better decisions in their utilization, in terms of efficiency and effectiveness. According to Nobel prize-winning economist Robert Shiller (2012), finance, far from being a parasite on society, is one of the most powerful tools we have for solving our common problems and increasing the general well-being.

In addition, the studies that discuss this topic (mainly regarding agri-food industry) often omit references to modern financial theory, which is tailored to large corporations, although the comparison between financial decisions of corporations and those of cooperatives could be a fruitful approach to highlight the distinctive characteristics of cooperatives and to trigger the development of a wider extended financial theory.

This chapter tries to contribute to this field. However, two limits of this comparison need to be preliminarily highlighted: (i) cooperatives widely differ from each other in constitution, scope, and business organization; with regard to organizational form and objectives, cooperatives may show as much variation as we find between cooperatives and investor-owned firms (IOFs): therefore, comparing generally defined cooperatives with non-cooperatives could be a particularly tough and potentially biased task; (ii) traditional cooperatives (in many industries) introduced different

organizational innovations, for example, new-generation cooperatives, partnership of limited liability company cooperatives, and equity-seeking joint ventures.

Here the analysis refers to a traditional cooperative, characterized by ownership restricted to members, open membership, redeemability of non-transformed residual claims, benefits only to patrons, a favourable tax regime, and “one member, one vote” principle: so, it is not generalizable to all cooperatives and suffers from limits above.

## **2 Why should cooperatives differ under the financial perspective?**

The first perspective to assume regards the objectives of cooperatives (Sosnick, 1960; Garoyan, 1983; Staatz, 1983, 1989; Cook et al., 2004). When a cooperative is considered as an independent firm or a sort of vertical integration of otherwise autonomous firms (for example, in cooperatives that produce/sell with input supplied by cooperative members), a single-objective cooperative is assumed, while the cooperative as a coalition of firms assumes multiple objectives. Soboh et al. (2009) present/discuss an overview of the studies and the objectives of the cooperatives as suggested by the different studies and try to summarize the different objectives corresponding to the different views.

Synthetically, the views of the cooperative as an independent firm or as a variant of it, consider the cooperative as a firm managed by entrepreneurs who seek to achieve the cooperatives’ single objective, discarding members’ objectives in the decision-making process. In the first perspective, the goal of the cooperative is profit maximization: therefore, the cooperative’s profit is the main performance indicator, members’ objectives are ignored, and the price paid for their product is considered as an additional variable cost. When a variant of an independent firm is emphasized, there are three possible objectives and related performance indicators: (i) maximizing the joint profit represented by the total profits of both the cooperative and member firms; (ii) maximizing the return to patronage, which is equivalent to maximizing the dividend to the members; (iii) maximizing output (turnover): the focus is on processing as much product as members optimally produce and having the capacity to anticipate the potential increase in the supply of raw material; obviously, this objective is subject to the constraint that sufficient return is made in order to pay out the total costs. In the vertical integration view, the objective is to maximize members return (patronage refund) per unit of input after paying the highest possible price for members’ products in comparison with prices paid by other firms in the industry. The performance indicators in this case are both prices paid to members and the return on patronage that they receive at the end of the accounting year.

Finally, the last view of the cooperative as a coalition of firms is basically assigning multiple objectives to the cooperative. The coalition can be formed between firms such as: heterogeneous member groups, managers, non-member customers, and non-member shareholders, in which each firm has its own objective. The objective of the different groups can be conflicting, in which a compromise decision will be reached as a result of bargaining processes. Therefore, the decision-making unit is assumed to consist of many parties within the cooperative. The business relationship among the various stakeholders of the cooperative can be organized either via a set of explicit and implicit contracts or a settlement of bargaining processes using game-theoretical approaches. Constructing a formal model for such a cooperative and subsequently finding appropriate performance measures is not only problematic but also requires strong assumptions to define the different sides (and their objectives) and their relations to each other.

This distinction obviously affects how to measure the performance of cooperatives vis-à-vis non-cooperatives (see Section 3).

However, other specific features of a cooperative could impact financial decision-making, synthetically, the following: (i) risk aversion; (ii) tax advantage; (iii) capital constraints deriving from

ownership structure; (iv) private (non-listed) firms; (v) agency problems rising from potential opportunistic behaviours by members; (vi) size. Some studies prove that cooperatives are larger than IOFs in the same industry (Oustapassidis et al., 1998; Soboh et al., 2011; Li et al., 2015): this evidence is based on the fact that cooperatives are less flexible in determining the optimal firm size than IOFs, i.e., producer cooperatives have to process the volume of input delivered by their members. However, this evidence is not definitive and depends on industry and country: many studies, in fact, refer to cooperatives in many industries (especially in the tertiary sector) as small firms and explain the more intensive presence of cooperatives in more fragmented industries as a mean for aggregating single small firms in larger and stronger entities. It is important that when comparing cooperatives with IOFs, the assumed size difference should be considered, since firm size can affect the financial variables that distinguish cooperatives from IOFs, otherwise the empirical findings could be distorted.

In the next sections the impact of these specific features on financial decisions/analyses is discussed.

### **3 Financial performance of cooperatives and its components**

Empirical studies on performance of cooperatives should distinguish comparisons and performance indicators with respect to the different perspectives and the corresponding objectives. However, this approach is not frequent. The most international empirical studies on the performance measurement of cooperatives prevalingly view them as profit-maximizing firms or a variant of this view and use financial ratios, not relying on potentially different objectives.<sup>1</sup> Soboh et al. (2009) present an ample review of international empirical studies on the performance of the cooperatives in various industries and countries, using different methodologies.

In general, the analysis of financial indicators utilizes the following DuPont identity (the more extended version), i.e. an algebraic expression that decomposes ROE (return on equity = net income on equity ratio) in five separate components (or variants of the model, less articulated: see Grashuis, 2017): the operating profit margin, the asset turnover ratio, the equity multiplier, the tax advantage ratio, and the interest ratio that respectively proxy efficiency (i.e., the ability to control the cost incurred in the revenue generation process), capital productivity (i.e., the efficiency of asset utilization), leverage (both in terms of indebtedness ratio and related incidence of interest costs), and the impact of taxes (EBT is the earnings before taxes, while EBIT is the earnings before interest and taxes):

$$\text{ROE} = \frac{\text{Net Income}}{\text{EBT}} \times \frac{\text{EBT}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

In general, empirical studies measure the impacts on ROE of the different components and therefore analyze its sensibility to them, both in samples of cooperatives and in comparisons between cooperatives and non-cooperatives sub-samples.

From the methodology standpoint, empirical studies that use logit/probit analysis (the likelihood of being cooperative is expressed as a linear relationship with the independent variables) (Soboh et al., 2011) are more robust than the descriptive analysis of average values (and their statistically significant differences with respect to non-cooperatives). In interpreting empirical findings, some studies omit consideration of the interdependence among the independent variables (for example, the impact of leverage on ROE depends on both indebtedness and interest costs) or to appropriately explicit the effect of control variables as size (Li et al., 2015) (if firm size impacts on profitability,

comparison should be between cooperatives and non-cooperatives samples that are homogeneous from the size perspective), industry and country: impacts are often industry- and country-specific (for example, in terms of taxes and accounting rules or any other influential factor) and including sector and country dummies might be insufficient. When ROE distribution is very heterogeneous, quantile regression (Grashius, 2017) gives more robust findings.

Since the emerging empirical evidence is very mixed and not generalizable, it is more interesting to discuss which indicators should differ in cooperatives and why, rather than reviewing the findings of empirical literature in this field (Soboh et al., 2009; Soboh et al., 2011).

With respect to profitability, cooperatives are not generally considered to be maximizers of return on capital investments. The owners of the cooperatives, contrary to the owners of the IOFs, are not mainly interested in the return on their investment but in other services/benefits provided by the cooperatives to their members. Consequently, cooperatives are expected to have a lower profitability than IOFs, due to higher material/labour costs (for inputs provided by member suppliers or workers) or lower revenues (for better selling conditions to member customers): these expectations have a strong empirical support, across different industries and countries.

Efficiency ratios refer to the efficiency of equity capital, assets, and working capital in terms of the production or sales size. Asset turnover, an example of an efficiency ratio, indicates the efficiency of the firm's assets in terms of the total turnover. With respect to operational efficiency, as measured by utilization of assets to generate revenue, some studies (Lerman-Parliament, 1990; Soboh et al., 2009) argue that cooperatives have the tendency to overinvest to form a greater asset base than that of IOFs. This is because cooperatives may treat their own equity as costless funds, without acknowledging their opportunity cost. Undervaluing the cost of equity may lead to overinvestments, resulting in a lower utilization of assets by cooperatives rather than IOFs. These aspects suggest that cooperatives have higher yearly equity growth than IOFs. However, the overinvestment can not only be in fixed assets, but it can also affect current assets, resulting in a higher level of inventories.

With respect to capital financing, cooperatives are usually viewed as equity-bound firms, suggesting that members' equity, in principle, is the only source of capital financing. Therefore, cooperatives may need to rely more on debt financing than IOFs to finance their activities and sustain a comparable growth rate. An additional factor is their attitude towards risk. The cooperative's principle of risk sharing, and mutual responsibility may provide an incentive to decision-makers of cooperatives to accept higher levels of risk rather than what the managers of IOFs would accept. Copeland and Weston (1988) argued that cooperatives have a higher level of debt because of the risk of bankruptcy. However, the nature of cooperative members could justify a higher risk aversion: they face total risk, not only systematic. Section 5 below discusses the relevant drivers of capital structure choice in cooperatives.

European cooperatives are generally not publicly traded, nor are they open for non-members' investment. The nature of the allocated and unallocated equity, in addition to the slow redemption process, leads to the conclusion that cooperatives have a higher growth in their general reserves and other non-issued equity base.

Therefore, theoretical conclusions as well as empirical findings are not univocal as far as leverage is concerned (see Section 5 for an in-depth analysis).

Solvency ratios refer to the ability of a firm to meet its long-term fixed expenses and debts and to accomplish long-term expansion and growth. Studies argue that, given that cooperatives have the tendency to use more debt than IOFs, the expectation is that cooperative's solvency is lower than the solvency of IOFs. A low solvency level implies that the cooperatives would have a higher likelihood of default on debt service payments, and higher prospects of bankruptcy than IOFs.

However, a higher risk aversion of cooperative members could suggest maintaining indebtedness within a solvency range. Liquidity ratios refer to the ability of the firm to meet its short-term liabilities and to quickly convert an asset into cash. For the same reasons as the solvency ratios, traditional cooperatives are expected to have lower liquidity ratios than IOFs.

Some minor studies analyze the technical and cost efficiency of cooperatives, often by utilizing different tools such as Data Envelopment Analysis and Stochastic Frontier Analysis.

Soboh et al. (2009) summarize the main expected results assumed in the literature as follows:

- cooperatives are perceived as inferior organizations due to monitoring, horizon, common property, non-transferability, and control problems. They might be less technically efficient mainly due to the higher cost to control the many principals of the cooperative. Moreover, cooperatives are argued to be less able to allocate efficiently due to the horizon problem (i.e., the lack of the property right that allows the member to sell his ownership share upon leaving the cooperative). This can cause the cooperative to under-utilize capital;
- cooperatives can also be scale inefficient due to the rapidly increasing cost to control large numbers of members, which prevents it from achieving a scale-efficient operation;
- other researchers view cooperatives as advantageous due to their goal alignment with members giving the cooperative an informational advantage in case altruism is present; also, due to lower agency costs, cooperatives have an operational advantage in economic conditions marked by lower returns.

Also in this case, empirical findings are neither univocal nor conclusive.

#### **4 Growth through M&As**

Numerous theoretical and empirical studies have been conducted in recent decades to analyze mergers and acquisitions (M&As) in terms of the underlying rationale and expected objectives (Melia-Martí and Martínez-García, 2010). Many studies have also been conducted on the effect of merger processes on the profitability or efficiency of the entities involved through the use of different methodologies.

Merger processes have had a relevant impact on cooperatives in many industries, as for example in agri-food and large-scale retail distribution, in different parts of the world as well as in European countries (for example, Denmark, the Netherlands, and Ireland in the agri-food industry; in Spain, concentration was promoted by government as a solution to the atomization problems of Spanish agri-food coops: see Melia-Martí and Martínez-García, 2015). The main need seems to be further strengthen bargaining power as well as to gain economies of scope in R&D and branding. In Europe, mergers have mostly been between cooperatives belonging to the same country, although there have been a few cases of cross-border unions.

However, although a large number of authors consider growth to be essential for the survival of the sector and for better financial performance, the relationship between size and business performance has rarely been proved. Studies on agri-food cooperatives (McKee, 2008) have mainly concluded that there is no statistically significant relationship between profits and efficiency on one hand and cooperative size on the other.

Merger theories are commonly classified into two groups: value-enhancing and non-value-enhancing theories. The former state that the primary aim of mergers is to maximize the firm's value (Salter-Weinhold, 1979; Seth, 1990) and assume that there will be a financial gain for shareholders in acquiring another firm (Halpern, 1983). The market for corporate control and synergy theories belong to this category.

Non-value-enhancing theories include the agency and managerial theories and indicate that managers and shareholders have different interests and motives and that managers may act in their own interest at the expense of shareholders (Mueller, 1969; Walsh-Seward, 1990; Roll, 1986).

The efficiency theory, based on value-enhancing theories, is the dominant theory in explaining mergers. Synergy moves managers to look for economic gains in the interest of shareholders. Synergy occurs when two firms run more efficiently (through cost reductions) or effectively (through better allocation of scarce resources) than separately (Sharma-Ho, 2002). Some of these gains come from the restructuring of business activity. For example, mergers are an opportunity for making structural changes in order to reduce costs and increase efficiency, such as redeploying staff and closing, restructuring, or replacing production plants or processes, etc.

However, there is still no consensus on whether mergers contribute to a real improvement of a company's performance given the varying results of these studies: despite the fact that mergers galvanize growth in activity for these firms, existing studies suggest that, in general, there does not seem to be any clear improvement in the post-merger situation of the acquiring or resulting organization, as most economic indicators suggest a very small or nonexistent improvement (Kumar, 2009).

Studies that explore the effect of a merger on share prices have had varying results. Some leading studies found empirical evidence that target-firm shareholders enjoy positive returns following a takeover announcement (Jensen-Ruback, 1983; Brickley et al., 1988), unlike those of the acquiring firms, which showed negative returns (Langetieg, 1978; Limmack, 1991; Eckbo, 2008) or invariable returns (Frank et al., 1991). Operating performance studies analyze the results of mergers using economic and financial information through the application of ratios of differing significance. However, their results vary and there is still no consensus on whether mergers contribute to an improvement in the enterprises' performance, measured in most cases through cash flow or profitability. Some of them find significant improvements in operating performance after the merger (Healy et al., 1992; Manson et al., 2000; Rahman-Limmark, 2004). Others do not find significant post-acquisition improvements or even evidence of decline (Ravenscraft-Scherer 1987; Clark-Ofek, 1994; Sharma-Ho, 2002; Kumar, 2009).

An important question in this field is to analyze if M&As among cooperatives have some specific reasons/objectives to be undertaken. Richards and Manfredo (2003a, 2003b) found that capital constraints are the most significant factor motivating agricultural cooperatives to involve in mergers, acquisitions, joint ventures, and strategic alliances, and that successful transactions tend to increase cooperative sales growth (not market power) at the expense of profitability. On the other hand, they describe the profile of a consolidation cooperative as efficient, minimally leveraged, and less liquid than the average. A 2000 survey conducted on US 500 agricultural cooperatives showed that reducing costs through reducing duplicated personnel is the most common motivation, followed by increasing the scale (size) of the cooperatives to remain competitive and cover increasing fixed operating costs; financial constraints are not a common motivation, in disagreement with the findings of Richards and Manfredo (2003). Vandeburg et al. (2000) identified as the most important driving forces for mergers and acquisitions in agricultural cooperatives in the United States the following: increased number of farms, increased costs, reduced profits, increased competition, and industrialization of agriculture. Another relevant objective could be business diversification: since cooperatives' owners are non-diversified investors, firm-level diversification positively impacts on cost of capital, by reducing risk and enhancing firm value; in addition, it might enhance debt capacity, by reducing credit risk and default probability.

We can derive some insights about this question by analysing what the pre-merger financial characteristics of the merging cooperatives are, when compared with other enterprises in the same industry, better by distinguishing between the different profiles of the cooperatives involved: acquiring and acquired cooperatives in acquisition mergers and involved cooperatives in mergers that result in a new entity formation. The financial stability of cooperatives involved in mergers is a key factor in the success of the operation as it has the immediate effect of increasing both their own resources and liquidity. As regards their pre-merger financial situation, some studies claim that more liquid and less leveraged cooperatives are more likely to merge, acquire, or form joint ventures (Melia-Marti and Martinez-Garcia, 2015).

Relative size could be a factor that determines whether a cooperative is acquired or an acquirer in a merger: acquirers usually have a relative size greater than those acquired (Ravenscraft-Scherer, 1987; Bruton et al., 1994; Larsson-Finkelstein, 1999) and above the sector average. On the other hand, their fixed assets/turnover ratio is much higher than average in the sector, significantly for both acquiring and acquired cooperatives. The high level of fixed assets/turnover of entities before merging has been shown to exist in studies carried out on different industries. The high fixed assets/turnover ratios lead us to think that restructuring assets may be one of the ways open to the cooperatives to obtain synergies by reducing their fixed costs. Indeed, the sharing of resources as a result of a merger involves the combination and rationalization of certain operative assets of the two companies, leading to a decrease in costs due to economies of scale and scope, one of the potential sources of synergy in merger being the lower fixed costs through better utilization of fixed assets.

On the other hand, in all cases of cooperatives that have taken part in mergers, they show a lower capacity to generate an operating profit ratio than the sector. In addition, acquired cooperatives show a return for members (in both patronage dividends and in the percentage of turnover destined to buying products, including from their members, who are the cooperatives' main suppliers) lower than the sector average. The reduced profitability could be due to either reduced earnings, proportionally excessive costs, or to both. However, turnover is significantly lower than the sector average and the fixed assets/turnover ratio is significantly higher, a symptom of an oversized fixed structure as compared with the sector average.

One of the objectives considered in a merger could be the desire to increase the members' earnings. In fact, some studies point out that in cross-border mergers of agricultural cooperatives, the members' main interest is the price that they get for the agricultural produce when selling it to their cooperative or to other processing firms. The members do not care about how the market value of the cooperative is affected by an eventual merger, since the shares that the members own in the cooperative are not tradable/appreciable. Melia-Marti and Martinez-Garcia (2015) show that when one cooperative acquires another, liquidity, business size, and return on assets are the most important economic-financial factors in determining the cooperatives' role. In an acquisition merger, the probability of being acquired rises with liquidity and falls with higher turnover.

## **5 The choice of capital structure**

The different factors that can influence the capital structure choice of cooperatives compared with non-cooperatives are synthetically identified here, by discussing the main theories on capital structure in light of the specific features of cooperatives (Chen-Katchova, 2019).

Capital structure studies in modern finance include two prevalent theories: the trade-off theory (integrated with agency costs and benefits of debt) and the pecking order theory. The trade-off

theory claims that the firm's optimal debt ratio results from trading off the benefits and costs of an additional euro of debt and that firms will gradually adjust their debt ratio to the optimal level to maximize the value of assets. Benefits of debt include:

- interests that is deductible from the corporate taxes (Modigliani-Miller, 1963). Cooperatives, however, should have an incentive to utilize equity capital in lieu of debt due to the differential tax treatment of profits in cooperatives. Profits in an IOF are taxed at the corporate level and any profits passed to owners through stock dividends are taxed again at the individual level. Most profits in a cooperative are taxed only once – at the cooperative level or member level – or never, depending on profits are distributed or accumulated. Trade-off theory of capital structure implies that the reduced taxation of earnings decreases the incentive for cooperatives to maximize debt financing as compared with IOFs, particularly when members and management do not assign the appropriate value or cost to equity;
- less cash flow problems (Jensen, 1986; Lang et al., 1991), and allowing for the option to liquidate (Harris-Raviv, 1990). Under the free cash flow hypothesis of Jensen (1986), the challenges associated with the monitoring of internal generated cashflow has the potential to induce sub-optimal and reckless investments only beneficial to management at the expense of shareholder. Hence, the inclusion of external finance in the form of leverage has the potential to mitigate the free cash problem. However, in the case of cooperatives, the owner-manager separation is weak, therefore the agency benefits of debt (related to its disciplining role on managerial decisions) are less relevant. However, if we consider the potential opportunistic behaviours of members (see Chapter 15 on passive owners), the disciplining role of debt could be relevant. In fact, the institutional setting of cooperatives (i.e., weak proprietary rights, dominated by one-person-one-vote principle, and limits to profits distribution), could favour opportunistic behaviours from members (Iliopoulos, 2003; Kalogeras, et al., 2009), such as the following: (i) the maximization of individual profit opportunities at the expense of the cooperative organization (i.e., arbitrage in selling raw materials on the market or conferring to the cooperative; lack of minimum quality levels of conferred inputs, when the cooperative purchase is guaranteed, as well as slack in provided working resources, etc.); (ii) unwillingness to provide sufficient equity (directly, or indirectly through renounced profits) to self-finance the cooperative; (iii) free riding behaviours to the detriment of organizations/other members. On the other hand, however, members of a cooperative do not expect a direct appreciation of their equity investment as investors in IOFs do (as noted above, cooperatives are more often non-listed companies), so managers may treat this portion of equity as a costless source of capital and members' incentive to monitor management's use of it may be weaker, leading both to ignore the opportunity costs of capital.

Disadvantages of debt consist of potential costs of financial distress (Kim, 1978) and agency costs arising from the monitoring costs and repayments risk that the lender transfers to the borrowers (Jensen-Meckling, 1976; Myers, 1977). According to the user-owner principle, cooperative managers may view the cooperative principle of risk sharing and mutual responsibility as an insurance policy, prompting them to assume more risk and borrow more heavily than managers of IOFs. From the supply perspective, however, the user-owner principle creates an implied obligation to return a cooperative's profits to members via equity redemption. Lenders may not consider cooperative equity to be as secure as equity in IOFs, since there is an expectation for cooperatives to eventually redeem in cash the equity held by their members (Chen-Katchova, 2019). On the other hand, however, risk aversion should be considered. Cooperative owners are non-diversified investors: differently from passive investors of large and listed IOFs, they invest capital, human assets, and



reputation in their cooperatives and so they are more averse to risk since they face the total risk and not just the systematic/undiversifiable one; their benefits also derive from non-monetary factors as self-esteem, control power, job preservation, etc. Therefore they aim at reducing risk and eliminating risk-shifting behaviours, that generate agency costs of debt, rather than maximizing equity value. In this vein, cooperatives could be seen not dissimilarly from small entrepreneurial/family firms in their view of firm as “a purpose in life” (Becattini, 2001).

The pecking order theory (POH) of capital structure is another influential capital structure theory. In contrast to the trade-off theory, Myers and Majluf (1984) suggested that firms do not have a target capital structure. Instead, firms’ choices of capital structure are driven by their preference among different sources of funds due to adverse selection in the financial markets when asymmetric information is present. Because of transactions costs when issuing new securities, firms are also facing information costs because the capital market would recognize the issuing of equity as a negative sign, resulting in the firm equity to be undervalued.

Based on pecking order strategy, there are three sources of funding available to firms: retained earnings, debt, and equity. The POH predicts a hierarchical order in firm financial policies: internal funds are the most preferred sources of financing, followed by lower risk debt financing only if internal funds become insufficient, with equity financing being the last choice.

However, considering that cooperatives are rarely listed companies, the stewardship theory of Donaldson (1961 and 1984) seems to be more appropriate to theoretically explain the POH rather than the Myers–Majluf approach (since the effects on stock prices are irrelevant):

- the user–owner principle makes the external equity access constrained. This principle not only limits the potential pool of investors – those who contribute equity to the business must also patronize the business – but also limits the rate at which equity can be acquired. In a cooperative, equity is built through the allocation and retention of the cooperative’s profits to its members. “Cooperative equity accumulation is further challenged considering that members’ equity in a traditional cooperative is non-marketable, non-transferable, and its stated value does not appreciate through changes in market values” (Li et al., 2015). Finally, illiquidity of members’ equity creates a horizon problem. Older members who may soon retire have little business incentive to support investments in long-term projects when the benefits from the investment will accrue to those who use the cooperative in the future;
- the growth purpose is consistent with the cooperative objective to maximize the utilization of inputs provided by members: self-financed growth (i.e., through retained earnings) combined with safe debt (i.e., highly rated, and with low insolvency risk) could better reconcile growth with the financial solidity and survivorship of a cooperative;
- retained earnings are the source of funds preferred by managers, since they are under their full control, less risky (since the higher risk aversion of cooperative owners), better from the tax advantage view. Within the scope of the user–owner principle, a cooperative can be managed to achieve an objective other than strict profit maximization, such as maximizing patronage payments, optimizing net prices to producers, maximizing value to members, and maximizing quantities of products sold and marketed. The objective chosen by a cooperative will influence the observed financing behaviour, according to the POH. If the cooperative will maximize members’ profits, leading to lower firm profitability, we could observe a slower equity accumulation, and *ceteris paribus*, a greater proportional use of debt financing. Conversely, a cooperative that pursues profit maximization will accumulate equity more quickly and be in a position to finance investments relying more heavily on retained earnings and therefore equity (which increases as a consequence) is more relevant than debt.

Mnisi and Alhassan (2021) consider, in addition to external borrowings, the external finance in the form of grants and subsidies, which some typologies of cooperatives can rely on, providing a review of international studies about the impact of external finance (through loans and grants/subsidies) on cooperative's technical efficiency. Similar to debt, subsidization also has a conflicting effect on efficiency. First, the "income smoothing" hypothesis argues that the access to subsidies and grants induces poor efforts since any revenue shortfall arising out of inefficiency is absorbed (Minviel-Latruffe, 2017). Conversely, access to subsidies and grants also has the potential to address the financial constraints, facilitating the adoption of advanced technologies and improve efficiency. International empirical findings are not univocal.

Original and worth talking about is the contribution on this field by Royer-McKee (2021), who formulate a model that indicates the optimal capital mix by maximizing the rate of return on equity while satisfying an interest coverage requirement that ensures it is capable of meeting interest payments. Cooperatives benefit from maximizing the rate of return on equity because increases in the rate enable it to pay a higher proportion of patronage refunds in cash and raise the rates at which it can grow and retire member equity. If the rate of return on capital employed is greater than the interest rate on borrowed capital, the cooperative's problem reduces to selecting the lowest equity position that satisfies the interest coverage requirement. The optimal equity position is inversely related to the rate of return on capital employed and directly related to the interest rate and the required level of interest coverage. The cooperative's choice of capital structure has implications for its ability to retire member equity. This model implies that the rate at which a cooperative can retire equity is inversely related to its equity position, a hypothesis that is at odds with the idea that greater leverage is an obstacle to equity retirement, as stated in several earlier studies. In addition, equity retirement is positively associated with the rate of return on capital employed and negatively associated with the interest rate, the proportion of patronage refunds paid in cash and the equity growth rate.

An in-depth examination of the literature reveals, therefore, that cooperative specificity can logically result in a greater user of debt financing in some perspectives and lower use in others. Thus, whether being a cooperative necessarily leads to a different capital structure relative to similar IOFs is unclear. As such, the question of relative debt becomes an empirical exercise. Not surprising, the empirical findings, too, are mixed (see Li et al., 2015 for a short review of empirical literature).

## 6 Preliminary conclusions and further research directions

The financial characteristics and underlying decisions of non-financial cooperatives are here analyzed, by focusing on some important areas like financial performance measurement, growth through M&As and capital structure choice. The empirical findings that compare cooperatives with non-cooperatives (a short review of the main international evidence is here provided) are mixed, fragmented (most studies are industry-specific, country-specific, time-period specific), not univocal, and not generalizable (in Grashuis-Su, 2019 an in-depth review of the empirical literature on farmer cooperatives).

In addition, comparison might be distorted since: (i) cooperatives widely differ from each other in constitution, objectives, and business organization: they may paradoxically show as much variation as we find between cooperatives and IOFs: therefore, comparing "generally defined" cooperatives with non-cooperatives could be a particularly tough and potentially biased task; (ii) the *ceteris paribus* principle (necessary to correctly isolate the impact of being a cooperative) is not always respected in empirical testing, when control variables (for example, size) that affect the

analyzed dependent variables are omitted or the compared sub-samples are non-homogeneous with respect to them.

In this study, whether and why the cooperative peculiarities could explain differences with respect to non-cooperatives in these areas are discussed, by providing a systematic framework of the relevant determinants.

Some preliminary considerations follow and indicate avenues for future research:

- better measures of financial performance of cooperatives could and should be elaborated: the widespread tendency to use traditional financial indicators ignores the different objectives of cooperatives and therefore comparisons with non-cooperatives are biased. Appropriate performance measures should be linked to the relevant objectives. However, simplistic adjustments of standard profitability ratios (as for example in D'Amato et al., 2022) are not satisfying solutions (summing input costs to income measure could hide operating inefficiencies): appropriate measures of firm profit as well as of incomes/revenues of cooperative members (that in standard measures of financial performance result in higher costs or less revenues) should be elaborated;
- in the case of cooperatives, to consider only financial performance (although extended to members' profits) could be belittling, likely more than in non-cooperatives. In fact, the cooperative business model has also wide-ranging economic–social implications, as well as it impacts on sustainability, in terms of better governance (i.e., more attention to interests of all stakeholders) and risk mitigation (less excesses and smoothing over time and across industry of performance);
- theoretical hypotheses on capital structure choice could predict more and less indebtedness of cooperatives, at the same time. In fact, the cooperative features that are relevant drivers of the capital structure choice are numerous and drive off in opposite directions. In the same vein, as far as reasons/effects of M&A activity are concerned. Therefore, the attention moves to empirical evidence, which must be wider, more systematic, so as to favour the robustness of results, their comparability among studies, and their generalizability.

### Note

- 1 Rare studies (see D'Amato et al., 2022 on Italian wine sector cooperatives) try to take into account the difference in objectives, by adjusting the performance measure, for example the operating profitability (ROS) in terms of EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) plus the raw material costs (when they are supplied by cooperative members as in agri-food industry). However, such adjustments seem to be partial and questionable.

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