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A comparative institutional approach to co-operative self-finance: locked assets, divisible and indivisible reserves

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Abstract

This paper approaches from a law and economics perspective the problem of self-financed accumulation of capital in co-operative enterprises. Different existing and past institutional systems are discussed and lessons drawn on how to improve existing institutional structures. Divisibility and indivisibility of self-financed capital reserves, as they can pave the way to improved systematic solutions, in co-operatives are used as heuristic ports of entry in the discussion. In this, institutional evolution is interpreted as a trial and error and open-ended process.

National and regional institutional systems (especially the Italian, the Spanish and the former Yugoslav ones) are considered and evaluated in terms of strengths and weaknesses to extrapolate new institutional solutions that would allow to overcome well-known weaknesses in co-operatives' financial structure. A nested system of self-financed divisible and indivisible reserves of capital is proposed. Different typologies of reserves would serve different aims and functions in the working of the capital structure of the co-operative enterprise, especially balancing patrimonial stability, allocative efficiency, members' financial involvement and performance. Correct legal regulation plays a fundamental role in steering the survival and reproduction potential of the co-operative system.

Key words: co-operative enterprises; accumulation of capital; divisible reserves; indivisible reserves; horizon problem; open-ended institutional evolution

JEL classification codes: B51; B52; J54 ;P26 ; P34

A comparative institutional approach to co-operative self-finance: locked assets, divisible and indivisible reserves

Introduction

Co-operative enterprises are mutual benefit entrepreneurial organizations in which governance and entrepreneurial processes are guided by collective action of non-investor stakeholders. Since the control of the organization is not assigned to investors, the creation, economic and financial sustainability of co-operatives can encounter significant obstacles in collecting and remunerating a suitable amount of financial capital. This kind of organizational form has access to financial markets almost exclusively through loans obtained from intermediaries, and through issuing bonds in the case of larger co-operatives and of co-operative groups. Co-operatives may not have access to equity finance supplied by external financiers, since investors do not control the organization and would not invest full risk capital in it. Consequently, direct access to stock markets is usually absent, barred by law, or severely restricted (Tortia, 2007, 2018; Navarra, 2011, 2016; Jossa, 2014). Difficulties in gathering and investing equity capital by both members and external investors imply that one of the most important obstacles to the spread of co-operatives is just the limited number of new ventures that are created (Burdín, 2014; Dow, 2018). Fundamental difficulties in financing co-operative enterprises led to the emergence and development of new institutions and institutional tools, different from the exchange of stocks, directed to secure financial independence and patrimonial stability to co-operatives. The asset lock (reserves of capital non-sharable among members and, in the most common case, not refundable), was first introduced on a voluntary basis to guarantee the presence of owned capital, which was necessary to finance investments, to serve as collateral guarantee and to shield the co-operative against negative exogenous events. A partial non-distribution constraints and the accumulation of indivisible reserves was recognized as a salient characteristic of the capital structure of co-ops in the seven ICA (International Co-operative Alliance) principles (third principle)¹ and made compulsory by national legislation in some countries, for example Italy, Finland and France. The non-profit distribution constraint coupled with the asset lock can be interpreted as an institutional tool developed to accumulate self-

¹ Web: <https://ica.coop/en/whats-co-op/co-operative-identity-values-principles>

finance through reinvestment of positive net residuals, similarly to the financial mechanisms developed in the past by non-profit organizations.

In other contexts, (partially) divisible reserves were introduced, often in conjunction with indivisible reserves, to increase members' financial involvement and improve performance. The well-known example of the group of worker co-operatives in Mondragon (MCC, Mondragon Co-operative Corporation),² Basque region of Spain, testify to this possibility. Reinvested positive residuals are partially shared among and appropriated by members, who, however, are required to leave their own shares invested in the co-operative in individual capital accounts till they cease to be members (till they quit or retire). The conjugation of divisible and indivisible reserves, each serving different economic functions (respectively financial performance and patrimonial stability) proved successful in several instances and deserving further investigation (Tortia, 2018). Because of this divisibility and indivisibility of reserves of capital are used as heuristic ports of entry in the discussion in this paper, as they can pave the way to improved systematic solutions (Hodgson, 2002; Witt, 2007; Berg, 2008; Thoenig, 2012; Lawrence and Suddaby, 2013; Scholz-Wäckerle, 2015).

After comparing existing institutional solutions, the paper introduces a new proposal for a nested and hierarchical system of divisible and indivisible reserves, whose different elements have different functions: stabilization and insurance in the case of indivisible reserves, financial involvement and performance in the case of divisible reserves. All of them are functional to financing investment projects, and supporting co-ops survival and expansion. Indivisible reserves, are considered as the inner layers of the capital structure. On the other hand, divisible reserves more readily allow the organization to adapt to the external economic environment through the delivery of financial incentives. They represent the outer layers of the capital structure in the proposed system.

Existing institutional systems are used as starting point to a comparative law and economics approach to institutional analysis (Commons, 1931, Mercurio, 1989; Schmidt, 1994; Slavikova, 2013). Institutional evolution is interpreted as a trial and error, open-ended process requiring historical and institutional enquiry (Vanberg, 1996, 2006; Nelson and Winter, 2002; North, 2005; Lewis and Steinmo, 2012; Schubert, 2014; Murrel, 2017). As main examples, the Yugoslav economy and some Western European instances of national legislation are

² Web: <https://www.mondragon-corporation.com/en/>

considered. In the former Republic of Yugoslavia, the greatest part of economic activities were socially owned and organized under the rule of worker self-management. Yugoslav law required to socially owned enterprises the reinvestment of all positive net residuals in locked assets and the prohibition to reduce the book value of invested capital. In Western European legislation on co-operative enterprises, instead, no such stringent constraints are detected. However, following the ICA third principle³, several countries introduced in their legislation the obligation for co-operatives to create indivisible reserves through reinvestment of positive residuals. Also in countries in which no such obligation exists, it is not uncommon to observe co-operatives implementing different forms of restrictions on the right of members to appropriate the economic value of assets owed by their co-operative. Examples are the requirement in statutory bylaws to create indivisible reserves or trust funds to which part or all the assets of the organization are to be transferred (Navarra, 2011, 2016; Tortia, 2007, 2018).

Existing legislation dealing with indivisible reserves is sparse and country specific. It clearly reflects idiosyncratic institutional evolution, as influenced by historical, political and cultural factors. To date, attempts to generalize existing institutional patterns through international comparative analysis in law and economics have been scant.⁴ This paper strives to make some step forward in this direction by, first, revisiting the former Yugoslav set-up of social ownership. Second, it highlights the main existing institutional patterns in some European countries (especially Spain and Italy). Third, it draws some generalizations based on economic theory and comparative law and economics. Finally, it proposes reformation of some specific aspects in existing systems, proposing some new solution and a new layered system of divisible and indivisible reserves.

A critical review of the institutional patterns that govern the accumulation of capital in co-operatives and their historical evolution shows that different countries followed substantially different strategies in the regulation of self-finance and capital accumulation. Comparative

³ The third ICA principle concerning members' economic participation states: "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. Members 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 their 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." Web: <https://ica.coop/en/whats-co-op/co-operative-identity-values-principles>

⁴ Some attempts are found in (Tortia, 2007, 2018; Navarra, 2011, 2016)

institutional analysis is not absent, but has been mainly developed by law scholars, and new economic insights may be needed (Cracogna, Fici and Henry, 2013; Fici, 2013).

On the theoretical side, several attempts have been made by economic theory to develop efficient self-finance institutions for cooperatives, for example by allowing them to develop a dedicated market for co-operative shares (Meade, 1972, 1980, 1995; Major, 1996; Dow, 2003, 2018; Jossa, 2012, 2014). However, one major shortcoming in the existing literature is the lack of contributions taking step from *existing* institutional structures, in an effort to select the most effective elements and overcome ineffective ones, find complementarities, evidence criticalities and overcome limitations. While the first approach has tended to look for overarching optimal solutions, the second approach is incremental. It is not aimed at finding optimal solutions but, within the logic of trial and error, open-ended evolutionary processes, seeks to build on the existing structures, adding new solutions and combining the old ones to achieve incremental or radical institutional innovation. Theoretical approaches directed to asset ownership in co-operatives were largely based on the presumption that co-operative institutions need to be equivalent or similar the former Yugoslav system (especially Ward, 1958 and Furubotn and Pejovich, 1970). This led to underestimation of institutional differences and change, and of the possibilities for recombination. A static view of institutions was conducive to negative conclusions as to the dynamic efficiency of reinvestment patterns in co-operatives (cfr. the well-known contributions by Furubotn and Pejovich, 1970, but also Furubotn, 1976, 1978; Pejovich, 1990). Indeed, this has been true also in contributions supporting a wider diffusion of worker self-management (Vanek, 1970, 1977). In these contributions, underinvestment and undercapitalization in workers cooperatives derive from non-divisible ownership of assets and from the ensuing truncated temporal horizon of worker members in the calculation of returns on financial investments. In rarer cases, a comparative institutional approach was applied to Western European institutional systems and co-operative legislation (Major, 2006; Zevi, 1984; Tortia, 2007, Navarra, 2011, 2016; Jossa, 2014).

Comparative approaches in institutional law and economics appear to be the most suitable to pursue the objectives set forth in this paper. In this perspective, the first step in the analysis is to present three major instances of regulation concerning self-finance in co-operatives : the Italian and Spanish ones (in the latter case as implemented in the Mondragon group), and the former Yugoslav one.

Existing (or existed) systems of co-operative self-finance

As an introduction to this section, it is possible to affirm that existing (or existed) self-finance instruments making up the capital structure of co-operative enterprises show different strengths and weaknesses. At the same time, different systems show different elements, but also important similarities across fundamental dimensions of the capital structure. Both similarities and different allow comparative analysis to deliver fruitful results. The present analysis singles out strengths, but is focussed on weaknesses, in an effort to improve upon them.

The Yugoslav system

The Yugoslav System of worker self-management originated in the systemic reforms carried out by the Communist Party of Yugoslavia between 1950-1952 and 1991-1992, when the whole Federal People's Republic of Yugoslavia broke down into five successor states. In this 40 years timespan, most economic activities were governed by self-management rules. Workers employed in socially held enterprises enjoyed a form usufruct of the capital assets whereby they collectively (with the mediation of representative bodies and appointed management) controlled the production plans and commercial policies of their own enterprise (Lindblom, 1977; Pavlowitch, 2002; Lebowitz, 2010; Katalenac, 2013; Uvalić, 2018). Under the social ownership system, the property of the assets of Yugoslav co-operatives was locked, non-distributable at any time, and non-consumable in any way by the workers governing the organization. Self-management legislation required all organizations to reinvest any net after-tax residual in their socialized patrimony to prevent any form of members' appropriation of surpluses, which had to be transformed into socialized assets. They also had to keep the real book value of their locked assets at least constant overtime, in order to meet a strict capital maintenance requirement (Pejovich, 1966; Singleton and Carter, 1982, Četković, 2015; Uvalić, 2018). In the intentions of the Yugoslav planners, these institutional constraints were to allow production organizations and public authorities to keep strict control over the existing capital stock and, by preventing disinvestment, foster accumulation, growth and creation of employment. However, the system proved to suffer from some serious weaknesses. The impossibility to recoup invested capital and members' truncated temporal horizon implied weaker and inefficient incentives to pursue an optimal schedule of investment programs (Furubotn and Pejovich, 1970). The capital maintenance requirement further weakened financial incentives ex-ante, since the impossibility to disinvest was likely to be factored in and

to further reduce investment plans (Zafiris, 1982; Tortia, 2007). The pace of accumulation in the transition from the pre-war agricultural economy to industrial socialism was supported by heavy policy interventions directly implemented by the government, or tapped into the system through publicly owned banks. In both cases, investment funds were supplied at lower than equilibrium interest rates. The banking system had to finance all Yugoslav firms, even the less financially sustainable. Excess credit to the production system contributed to keep inflationary pressure high and to increase the foreign debt of the country throughout the duration of the self-management experiment (Furubotn, 1980a, 1980b, Četković, 2015). The interventions of the government and of the banking system guaranteed sufficient finance to the most fundamental and most highly remunerative investment projects, but lacked adaptability to new and riskier interventions, and sufficient financial incentives in the case of marginal and long-term investment projects (Furubotn and Pjovich, 1970).

The strengths and weaknesses of the Yugoslav system can be compared with the emergence and evolution of co-operatives that were formed spontaneously in market oriented countries in Europe and North America starting from the middle of the XIX century. Fully socialized ownership of co-operatives never prevailed in Western countries. However, both the ICA principles, and legislation in several countries introduced (partial) forms of non-divided ownership at the firm level, for example a partial non-distribution constraint and the asset lock. These elements contributed to make the financial structure of Western co-operatives partially resemble in efficiency terms, the working of the Yugoslav system. Some literature evidenced the tendency, in Western Democracies, of worker co-operatives to concentrate in low risk and low capital intensive sectors (Bartlett et al., 1992; Bonin, Jones and Putterman, 1993; Tortia, 2003; Podivinsky and Steward, 2006). This evidence is compatible with the hypothesis that worker co-operatives tend to underinvest and demand higher than average short term return rates, even if alternative hypotheses and evidence have been put forward to explain the same phenomenon (Albanese, 2003; Zevi, 1984; Tortia, 2007, 2018; Borzaga and Fontanari, 2018). Several counterexamples have been reported, such as the diffusion and endurance of highly capitalized worker co-operatives in Central Italy and in Spain, especially the Mondragon Group (Thomas and Logan, 1982).

The Italian system

In order to disentangle contrasting evidence, the similarities and differences between the Yugoslav system and Western European systems in Italy and Spain are further discussed. The

contemporary Italian system of co-operative self-finance originated in the aftermath of WWII, with the new co-operative legislation passed by Parliament in 1947.⁵ The Italian system of self-finance is based on two pillars: the first is made of individual financial contributions by members (the so-called social capital - *capitale sociale*), which represents the individual share of ownership in the cooperative, and to which the right to participate in the assembly and elect the governing bodies is attached. Members have the right to ask for reimbursement of this financial instrument only when they quit the organization or otherwise renounce or lose the status of member. The value of individual capital shares can, but need not, be increased, because of destination of part of net surpluses (dividends) to this part of the patrimony, or they can also be increased because of financial re-evaluation (to keep up with the inflation rate, or because of increased goodwill). Distribution of profits is capped and anchored to the remuneration of postal bonds. Also, end of the year rebates (membership patronage refunds), can be either distributed in cash to members, or reinvested (partially or totally) to increase the value of individual shares. The fundamental importance of this financial instrument in co-operative law notwithstanding, its actual relevance is limited, as its weight over total owned assets in the greatest part of co-operatives is marginal or even negligible.⁶ The second pillar of self-finance is represented by accumulation of indivisible reserves (locked assets) through the reinvestment of positive net residuals. Locked assets in the Italian legislation are exclusive ownership of the co-operative as corporate entity. This excludes the possibility of any claim by individual members or by the membership as a whole on the economic value of the assets. Indivisible reserves cannot be appropriated by members both during the active life of the organization, and also in case of cessation of business activity (bankruptcy or liquidation), or conversion into investor owned company.⁷ All co-operatives are required to reinvest at least thirty per cent of their net residuals in indivisible reserves, in order to guarantee to the organization the necessary degree of financial stability and independence.⁸

While individual contributions may have had crucial importance in the origination of the co-operative movement in Italy, when members often created new ventures out of their own

⁵ The so-called Basevi law (D.Lgs.C.P.S. n. 1577/47), named after the name of the writer of the reform.

⁶ Only in the case of co-operative banks individual shares usually overcome one or few thousand euros.

⁷ In case of bankruptcy or liquidation, any positive residual value of the organization is transferred to mutualistic funds used by the national or regional associations of co-ops to finance new co-operative start-ups.

⁸ Given their peculiar social role, in the case of co-operative banks this legal requirement is lifted to seventy per cent.

personal wealth, this importance has been decreasing steadily over time. The development of the system of internal finance since the middle of the twentieth century led to the dominance of locked assets over the total patrimony of co-operatives, and to the marginalization individual ownership and contribution.⁹ This uneven process took place because of some fundamental reasons: first the limited financial capability of members, which, in most cases, is incompatible with substantial financial support to organizations operating in medium to high capital-intensive sectors. This aspect of the process was reinforced, in many cases, by the limited willingness of members to invest substantial shares of their personal patrimony in risky assets, which would violate the necessity to differentiate and reduce the riskiness of individual portfolios. The second reason relates to the preference given by most co-operatives (i.e. by top decision makers in board of directors) to accumulation of capital in the form of indivisible reserves and not of individual capital shares, since the former grants stricter control to the governing bodies over the patrimony of the organization. The latter corresponds instead to fractioned, variable and unstable (due to members' turnover) ownership (Tortia, 2018).¹⁰ The waning of individual financial contribution and participation can be considered a largely spontaneous phenomenon, unpredictable and unintended at the time legislation was passed. It may have been fostered, however, also by fiscal advantages granted to reinvestment into indivisible reserves, which are partly or completely exempt from corporate taxation.

The strength of the Italian system is to be found in not very much in its performance, but in its high degree of stability, instead. While the cooperative sector of the economy showed only weak ability to growth, its sustainability and resilience, also during economic crisis, and its ability to generate new employment has been enviable (Euricse, 2015; Carini and Borzaga, 2018; Tortia, 2018). Stability is reinforced by the legal requirement forbidding any distribution of net residuals in all cases in which indivisible reserves are reduced to match operating losses. This constraint on distribution is not lifted until the initial amount of divisible reserves is reached again.

As evidenced, and contrary to the Yugoslav case, the system is not incompatible with individual ownership. Co-operatives are required to reinvest only thirty per cent of their net

⁹ Members' personal contribution is still nowadays important in crisis situations, in which the survival of the organization is at stake and personal contribution becomes the only way out.

¹⁰ The percentage of net residuals reinvested into indivisible reserves of capital by the greatest part of Italian co-operatives is close to one hundred per cent.

residuals into indivisible reserves, while the remaining part can, in principle, be distributed in the form of dividends, re-evaluation or increase of individual shares and patronage refunds. That is, legislation allows individual ownership to be substantial or even dominant. The spontaneous preference given to collective asset ownership may testify to the substantive importance of patrimonial stability for the survival of cooperatives. On the other hand, the flexibility of legal regulation, which does not impose any pre-ordered solution, but only sets loose constraints, can result in better adaptive ability in terms of financing longer term, strategic investments with locked funds, while non-specific and short term investments may more easily be financed at the margin by individual shares.¹¹

The Italian system proved adaptively fitter than the Yugoslav. Its stability allowed Italian cooperatives to spread in some areas of the country, especially in North Eastern and Central Italy, and in some sectors of the economy.¹² The overall weight of the co-operative sector on national GDP is estimated above five per cent, while employment in cooperatives reaches about 10 per cent of the national total (Euricse, 2015). As a critical remark, it can be added that worker cooperatives show special weaknesses, as they occupy a tiny fraction of the sectors in which they operate. This is probably because of the difficulties they find in reaching required capital intensity, of their reluctance to invest in risky activities, and of the strong competition coming from investor owned companies in the sectors in which they operate (Podivinsky and Stewards, 2006).

Among the critical aspects of the Italian system of self-finance, one specific element, which called for attention in the specialized literature, has to do with the possibility for co-operatives to ascribe net losses to indivisible reserves. The absence of any legal constraint limiting such possibility would engender the risk of co-operatives “eating up” their own patrimony by running inefficiently high operating costs (e.g. high labour and managerial remuneration) in successive accounting periods. This weakness in the financial structure of cooperatives is likely

¹¹ Importantly, as specified later in the paper, individual shares do not undergo the problem of members’ truncated temporal horizon (Tortia, 2007; Dow, 2003, 2018).

¹² Co-operatives especially spread in the agricultural and food sectors (co-operatives deliver about 50% of agricultural production delivered to the retail sector and as input to the food sector); in the credit sector (cooperative credit banks serve about 8 per cent of the credit market nationwide, but this percentage reaches about 50 per cent in some areas, especially the Trentino Alto-Adige region); in some industries (especially transport and fishery); in social and personal services (social cooperatives occupy about thirty per cent of the sector); and in retailing thanks to consumer and retailer co-operatives (Euricse, 2015).

to have adverse patrimonial effects both ex-ante and ex-post of the accumulation of indivisible reserves. Ex-ante, it can put cooperatives at a disadvantage in the solvency rating of financial intermediaries because of adverse selection, since vulnerability of reserves may induce some co-ops to increase borrowing. Less financial support from intermediaries would imply, in turn, slower growth, undercapitalization and patrimonial vulnerability. Ex-post, it can favour moral hazard in terms of members' and managers' increasing costs and distribution of surpluses. Given the absence of legal regulation on this specific issue, novel proposals are introduced in the remainder of the paper, which are aimed at strengthening patrimonial stability, the ability to access the credit market, and guard the patrimony against misbehaviour by decision makers.

The Spanish system

The Spanish system is considered only in the instance specified in the statutory bylaws of the Mondragon group of worker co-ops in the Basque region. The Mondragon group is characterized by a mixed capital structure whereby the net residuals of each co-operative are mandatorily divided into two different destinations: (i) indivisible reserves similar to the ones that prevalent in the Italian system; (ii) rebates or patronage refunds distributed to worker members on the basis of their labour contribution (as measured by their current yearly income). The first type of self-finance has already been discussed. The second type deserves further inquire, in line with already existing literature (for example, Ellerman, 1986). Individual rebates are compulsorily reinvested in the organization through a system of internal capital accounts. Worker members can ask reimbursement of their individual share of capital only when they cease to be members (upon quittance or retirement). This way, the individual appropriation of shares of net residuals is transformed into a compulsory channel of self-finance. By strengthening individual financial incentives, this solution has been successful in allowing Mondragon co-operatives to become highly capitalized, highly performing and to overcome the problem of members' truncated temporal horizon (Furubotn and Pwjovich, 1970; Vanek, 1970; Tortia, 2007; Perotin, 2013). Insofar individual capital accounts represent financial instruments more similar to loans than to shares, they can be interpreted as external finance in the theoretical model of the labour managed Firm (LMF) developed by Jaroslav Vanek (1970, 1977), and refined by Bruno Jossa (2014; 2016; cfr. also Cuomo and Jossa, 1997; Albanese, 2003). This kind of financial instrument does not suffer from the horizon problem because it is appropriable (in a deferred way) and members receive its face value plus interest. Furthermore, it can be interpreted as the marginal component of the capital of the organization, which is used to finance non-specific (general purpose) investment programs characterized by

low to medium returns in the short to medium run (these projects would likely not to be financed by indivisible reserves because of the horizon problem: Tortia, 2007; Perotin, 2013). These advantages need to be compared with some weaknesses, since the obligation to reimburse individual accounts can engender substantial capital variability, which may deliver its most dangerous consequences in difficult economic conditions (members quitting the organization and asking for reimbursement can aggravate the crisis). Furthermore, divisibility and individual ownership of capital can also account for increased risk of demutualization especially in the case of the best performing and most competitive co-operatives, since they create financial incentives to sell individual quotas to investors, or to demutualize and convert individual shares into investor owned shares (cfr. Pencavel, 2001, on the plywood co-ops of US Pacific Northwest).

It is possible to state that the Mondragon system has been able to reach financial equilibrium and prosper because of its mixed nature since indivisible reserves have been guaranteeing the necessary degree of financial stability and guarded against demutualization of the co-operatives also during the last ten years of harsh economic crisis in Spain. Individual internal accounts, instead, fostered financial participation and performance, allowed overcoming under-capitalization thanks to higher capital intensity (Tortia, 2018). Because of these reasons, any project aiming at improving the financial performance of co-operatives may consider introducing a system of recoupable (divisible) internal capital accounts, and to conjugate it with a system of indivisible reserves. This paper is no exception. This kind of divisible reserve can be interpreted as one further reserve layer (the fourth) in the capital structure of the organization. It is defined as the outer or most external reserve layer, given its high degree availability to the whole membership.

A new system of self-finance and distribution in co-operative enterprises

The main objective of this work is to clarify the possibility to introduce improvements in the structure prevalent in the Italian and Spanish systems of self-finance in co-operatives. In the present stage of development of the Italian legislation, two kinds of indivisible reserves are defined by law: the first is the legal reserve, which is required in all co-operatives and corresponds to the per year accumulation of 30 per cent of positive net residuals. The second type relates to voluntarily accumulation of indivisible reserves by individual co-operatives.

This second type, named “free reserve”, is voluntary, but undergoes the same constraints on appropriation as the first type (it cannot be appropriated by members both during and after the life of the organization). More effective regulation for this kind of financial instrument is developed by creating a stratified, or hierarchically ordered system of reserves in which the most fundamental, inner or internal layers are more shielded from intervention and appropriation not only by external investors and members, but also by directors. The main function of the inner layers would be to guarantee maximum protection to the core of the patrimony and survival of the organization in financial distressful situations, but also to protect creditors against unfair and unlawful appropriation by managers and members. Outer layers, as discussed later on, would play more traditional functions, such as finance ongoing, medium to long term investment programs, build collateral guarantee against liabilities, and insure the membership against negative exogenous events (outer layers can absorb negative economic results in case of negative shocks). Finally, the most external layers would be mainly directed not only to finance investment programs, but also to involve members financially and incentivize them.

Five different reserve layers

The most fundamental reserve layer (named Reserve Type 1) would be usable to aid financially distressed firms only in extreme cases, that is when the firm is filed in insolvency procedure through receivership, voluntary liquidation or bankruptcy. The idea underlying such proposal is to restrict the utilization of this kind of reserve to the most serious cases of financial distress, in which the dominant aim is the coverage of unmet liabilities. A second, less fundamental and less protected reserve type can be introduced. This second type would be accessible to directors elected by the membership, but only after extraordinary procedures are implemented, for example the calling of an extra-ordinary assembly of members that has to evaluate and approve the utilization of such reserves to face financial difficulties (Reserve Type 2). Additional constraints can be added to the utilization of these reserves. It is possible to require that all or one part of directors is substituted with new elected members when these reserves are accessed to allow for renewal of strategic decision making in the face of the crisis. This may also imply the appointment of new top management. The idea backing these requirements would be that the utilization of this kind of reserve is a sufficient fact to signal mismanagement and inability to deliver proper strategies and effective decisions. The third layer would be similar to the reserve type whose utilization is widespread in the present day Italian and Spanish systems: it would be indivisible and not appropriable members, but freely accessible to finance

investments and to match negative results (Reserve Type 3). Reserve Type no. 4 corresponds to the Mondragon system of internal capital accounts (Ellerman, 1986, 2018). This layer corresponds to shares of positive net results distributed to members proportionally to their respective labour contributions (end of the year rebates or patronage refunds added to monthly wages). Individual shares become part of the patrimony of the organization, and are not appropriable while the member is incumbent. Members can claim reimbursement upon quitting the organization. This kind of reserve has a twofold function: since it does not undergo the horizon problem, it can be used to finance less remunerative projects, which would not be financed by indivisible reserves; furthermore, it creates a direct channel for the financial involvement of members, with potential positive results on their active participation and productivity.¹³ Finally, the fifth layer would represent a pure instance of distribution of net residuals. Distribution would take place through patronage refunds and would represent an additional channel for financial participation, and a form of remuneration of positive performance over the accounting period. It would serve a similar function to employee ownership, profit sharing, and broad-based stock options in capitalist corporations (Kruse, Freeman and Blasi 2008; Kruse Freeman and Park, 2010).

The working of the system

The hypothesized working of the system would require each co-operative to assign a minimum percentage of net residuals to the four different typologies of reserves, while an additional share would be distributed in liquid form (fifth layer). The five shares do not need to amount to one hundred percent of the residual. While co-ops would have to access all of them on a yearly basis, the total constrained amount and the individual shares can vary widely, by country, sector, and by internal regulation of individual organizations. Different combinations of the five different shares can be adapted to different contextual conditions. The destination of the residual, not constrained share of residuals, would be left to the free decision of the board of directors on a yearly basis, or to more precise proportions included in the statutory bylaws of each organization or co-operative group.

The freely disposable part of the residual would not necessarily be the less important one. Instead, it would serve the necessary function of adapting the financial policies of individual

¹³ This kind of reserve can also be transformed into bonds (external medium-term finance) when members quit the organization (Tortia, 2007).

organizations to members' needs and to external conditions (e.g. high vs low capital requirements). It would allow different degrees and rates of capitalization in relation to required capital intensity by the sector of operation, and by the position of each specific organization in its life cycle. Start-ups and young organizations working in emerging sectors may require pace of reinvestment, while older organizations working in mature or declining sector would require lower pace of capitalization, or even divestment. On the other hand, it also serves the function of adapting self-finance to market conditions, since co-operatives reaching higher than average results may need to reinvest a smaller share of their residuals than co-operatives undergoing difficult economic and financial conditions.

The overall structure of the system would appear as a layered one, in which the deeper institutional layers would represent the core and almost inaccessible fraction of the patrimony and would more strictly correspond to the firm survival potential. Constrained reserve typologies (Types 1 and 2) guarantee patrimonial stability and the ability to face financial distress. This function is especially important in (non-investor) membership based organizations such as co-ops, which have more limited access to financial markets than investor owned enterprises (Birchall, 2010; Borzaga and Tortia, 2017). Heightened difficulty to access financial markets requires a more constrained regulation of the financial structure. The deeper layers. The intermediate layer (Layer 3) would retain its centrality in the working of the system, as it currently happens in Italy and in Mondragon. It would have a double function. On the one hand, it guarantees stability by denying divisibility and appropriation. On the other hand, it is the main instrument under the control of decision makers (managers and directors) that can be freely used to pursue investment projects, even when they are characterized by a relatively high degree of risk, and to match operating losses. Since risky investment plans have crucial role in guaranteeing firm growth and expansion, the possibility to use this kind of reserve to make up for negative results can reduce the degree of risk aversion of decision makers. (Podivinsky and Steward, 2006). Finally, the outer or surfacing institutional layers (Types 4 and 5) would introduce highly powered financial incentives, better financial involvement of members, and would contribute to finance (Type 5) less strategic and remunerative investment projects. The remaining (not constrained) part of the residual would allow better adaptation to the external environment and better satisfaction of members' needs.

In sector in which capitalization requirements are lower, much of the capitalization constraints can be lifted by law or by statutory provisions. Organizations working in these sectors could operate either without patrimonial requirements, prevalently on the basis of loan

finance delivered by banks or by members themselves (cfr. the theory of the externally financed labour managed firm in Vanek, 1970, 1977; Jossa and Cuomo, 1997; Jossa, 2014) or they could accumulate self-financed capital under looser requirements, for example only on the basis of individually owned internal capital accounts (reserve Layer 4; in this respect cfr. Ellerman, 1986). Upon closure or liquidation of the organization, all its capital would be returned back to members in the form of loan reimbursement. Also this model would come close to the labour managed firm theorized by Jaroslav Vanek (1970, 1977) and developed by Bruno Jossa (2014, 2018; cfr. also Jossa and Cuomo, 1997), in which the whole capital of the organization is externally financed. This kind of solution does not incur the problem of the limited time horizon of members since members can recoup the whole amount of capital invested in the firm (Furubotn and Pejovich, 1970; Zafiris, 1982; Ellerman, 1986; Tortia, 2007). By overcoming the horizon problem, external finance is able to strengthen the incentives for members to maximize the produced and appropriable surplus. Members would reap the whole amount of net residuals (even if their liquidation may be deferred) since no locked assets would be required. On the other hand, this solution is likely to be characterized by low capitalization, and weak ability to access credit because of lack of collateral guarantees.

At the opposite extreme of the capitalization spectrum, high capital intensity can be achieved through stricter constraints imposed by law and bylaws requiring reinvestment of large shares of net residuals in locked assets (reserve Types 1 through 3) and through intensive access to the credit market. In the most extreme cases, distribution of net residuals (Layer 5) may be altogether excluded). This solution would increase the availability of investment resources and collateral guarantees. Since high capital intensity is usually found in conjunction with the need to carry out long term investments, the horizon problem is likely to be particularly severe in capital intensive activities especially in the case of worker co-operative (since worker members are necessarily characterized by limited time horizon). As stated, reserve type 4 can help contrasting the horizon problem by elimination truncation. The high degree of capitalization of co-operatives in Mondragon can testify to the positive outcome of this kind of solution. In some cases additional instruments may be needed, for example financial participation of external actors characterized by open-ended time horizon, such as public authorities and public finance. Further incentives to help co-ops strengthen their investment ability can be introduced, for example in terms of tax reliefs or loan finance at lower than market rates. The Mondragon system of capital accumulation represents a well-known instance

of creation of strict and clearly structured constraints, which require all positive residuals to be reinvested in the organizations, through a mixed systems of reserve type.

An example

As a matter of sheer exemplification, it is now stated and discussed how the new system of reserves could work in several common instances. A very simple solution would be to allocate ten per cent of each year net residuals to each of the four different types of reserves and ten percent to in-cash distribution to members. This would amount to destination of 50 per cent of residuals being ex-ante constrained.¹⁴ No precise indication of the exact quantitative relation between different kinds of reserves is given at this stage beyond the presented example. It is only stressed that a correct working of the system would require a non-negligible share of net residuals be reinvested in each type of reserve and distributed. The remaining half of the residual would be left either to the decision of directors, or to provisions included in statutory bylaws and other internal regulation. It could be destined to any of the five possible end positions in different proportions. Not all destinations would be required in this case, but each organization would choose the most suitable ones and their relative dimension.

This exemplifying solution testifies to the possibility to reach at one and the same time a high degree of flexibility in the appropriation of net residuals (50 per cent is left to the free decision of individual organizations), and a highly structured pattern of reinvestment of residuals (all 5 different types of destination would be activated).

The economic function of different institutional layers

The creation of a layered structure for the self-finance of cooperatives is justified by the different functions of the different layers. Different function means that different layers, and their different institutional features, are needed to achieve different objectives, which are all likely to be crucial for survival and expansion of cooperatives. In general terms, the main polar functions are the strengthening and stabilization of the patrimony in the medium to long run, on the one hand, and to incentivize better economic and financial performance, on the other hand (Tortia, 2018). A better knowledge of these functions would allow each organization to better adapt (modularize and tailor) the pattern of capitalization to different internal and

¹⁴ The Italian legislation constrains only 30 per cent of net residuals to be reinvested in indivisible reserves.

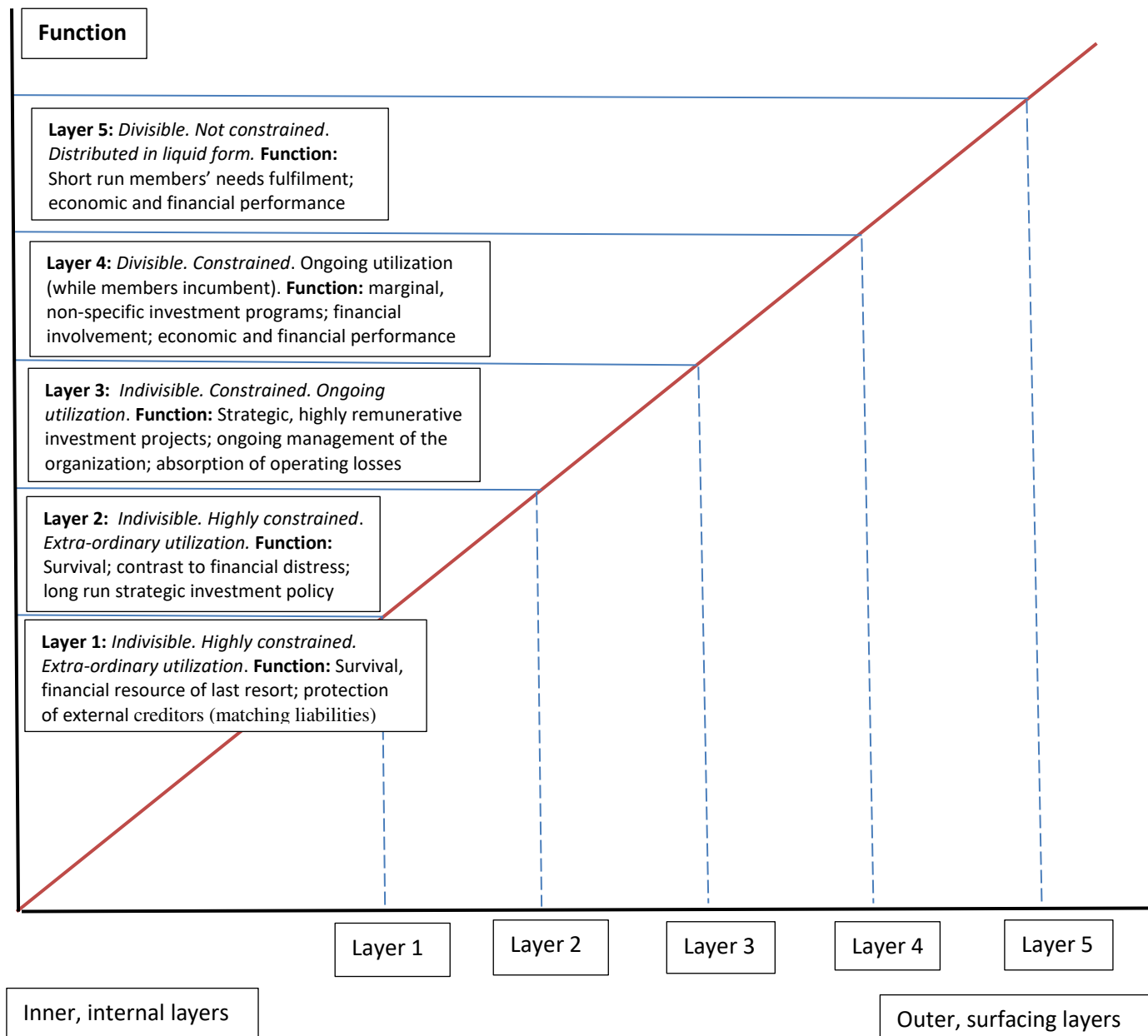
external conditions. Regulation itself can be developed by individual organizations based on their unique knowledge of the capitalization needs of specific activities and sectors (Ostrom, 1990; Tortia, 2018).¹⁵ The main different functions of different layers are synthetically represented in Figure 1.

More specifically, when the most internal layer is considered, the utilization of self-financed funds could be barred or severely restricted to access by top decision makers in the organization. This layer may be accessed only in case of bankruptcy, or when the organization can still survive, but needs temporary receivership. It would represent the financial resource of last resort, needed to pay back liabilities, before the firm is liquidated and ceases to exist. Protection would answer a threefold need: (i) guarding the organization against the misbehaviour of top decision makers, this way limiting the possibility that reserves are used in an incorrect or opportunistic way; (ii) building up an insurance fund protecting firm survival when internal decision makers are not able to take adequate decisions (this fund would become available only when all other resources are already used up); (iii) protecting external creditors against misbehaviour by both members and decision makers. Importantly, the presence of this typology of highly sheltered funds would increase the reliability and trustworthiness of the organization, this way increasing its bankability and borrowing capacity. Knowing the existence of capital reserves of last resort, lenders would be more prone to increasing their financial support.

The second layer, more easily accessible than the innermost, would be made by funds that can be available for utilization only subject to extraordinary administrative procedures. Such funds could be used in especially critical situations, when all other reserves except Type 1 have been exhausted. Utilization would require consent by the assembly of members in a special and dedicated meeting, in which pro and cons of utilization are discussed together with redefinition of long-term strategic planning. Such non-standard procedures are intended to limit the utilization of these funds to the most critical situation in which survival is at stake, and new strategies are required.

¹⁵ Other aims for stricter capitalization constraints are imaginable, for example a higher rate of creation and retention of employment.

Figure 1. The layered structure of self-finance and distribution in co-operatives



At the opposite extreme we would find the outer, more external layers (Layers 4 and 5), whose functions are radically different from the internal ones. Outer layers would be intended to allow the organization to increase adaptive fit to the external environment, by building up reserves that could be easily used by the organization to carry out investment programs in a ready and fast way, most often in a short-term perspective. Flexibility in utilization, and members' financial involvement appear to be the most relevant functions. The acquisition of new general purpose machineries, technologies and equipment are typical examples. Outer layers, when not needed to carry out investment programs, can be used as financial incentives, and distributed

to members at the discretion of the board of directors in the form of reinvested or cash patronage refunds. Increased productivity in co-operatives, especially in worker co-operatives, is not alien to recourse to highly powered financial incentives, as financial participation (for example in the form of ESOPs) has been shown to be conducive to heightened commitment and effort contribution (Kruse, Freeman and Blasi, 2008; Kruse, Freemand and Park, 2010). Among co-operative enterprises, systems of divisible reserves with or without the presence of internal capital accounts, such as the ones developed in the Mondragon group, easily come to mind (Ellerman, 1986).

Middle-way the two extremes, the most common and widespread forms of financial reserves would be observed (Layer 3). As observed in several continental European countries, such as Italy, Finland, Spain, France and Germany, co-operatives accumulate indivisible reserves that cannot be shared by members in the form of patronage refunds, or dividends,¹⁶ but partake the patrimony of the organization. Such reserves correspond to the standard, ongoing governance of the organization, as especially related to the planning of medium to long-run investments, to absorb operating losses, and as collateral guarantees for obtaining loans and for other liabilities. This kind of reserve emerged historically as the most typical way in which co-operatives accumulate funds and finance investment programs, and would keep on representing the core of the operation of the self-finance machinery.

Discussion and policy implications

The relevance of non-divided asset ownership in co-operative enterprises is testified by their prominent presence in the seven ICA principles,¹⁷ and by their mandatory existence in several systems of national legislation. It is also testified by the spontaneous emergence and spread of the asset lock and of assets transferred to trust funds in national contexts in which non-divided asset ownership is not prescribed by law. This contribution has represented an attempt to critically discuss the economic nature and functions of non-divided asset ownership and to develop in an integrative way a comparative analysis of different national legislations, leading

¹⁶ In Italy, upon winding up the organization, the residual value of reserves is devolved to special funds that are used to finance new co-operative start-ups, or handed over to other organizations with similar organizational form and purpose.

¹⁷ Web: <https://ica.coop/en/whats-co-op/co-operative-identity-values-principles>

to the working out of new structured solutions for self-finance in co-operatives. Comparative law and institutional economic analysis supported the refinement of the structure of reserves and distributive patterns in the direction of granting better protection and stability to the patrimony of the organization and, at the same time, improving performance and adaptation to the social and business environment. These objectives were pursued through the proposition of a layered and nested structure of different typologies of divisible and indivisible reserves. This innovative structure has the potential to grant, at one and the same time, stability, flexibility and improved performance through members' financial involvement. Different typologies of reserves play distinctively different functions in supporting the achievement of members' and organizational objectives. The combination of these functions may be able to strengthen co-operative resilience and performance also in turbulent economic environments.

The introduction of the described system clearly requires legal reform defining and enforcing the new types of divisible and indivisible reserves, especially the inner layers. The fulfilment of the new legal constraints on the limitations to the utilization of indivisible reserves would create new important guarantees favouring creditors' rights, and would, in turn, strengthen the financial trustworthiness of the organization. On the other hand, new regulation needs to be flexible enough to guarantee adequate freedom of manoeuvre to individual organizations. The destination of some relevant share of net residuals needs to be left to the autonomous decision of individual organizations, which hold the best possible information concerning the capital requirements and opportunities characterising their business environment. Also, the possibility to freely decide on the utilization and distribution of positive residuals can represent an important incentive for members' to create and run new ventures. The reconciliation of contrasting functions and incentives would require dedicated regulation, which, predictably, may be differentiated on the basis of firm dimension and sector of operation. Organizations needing to access high scale economies and high capital intensity would undergo stricter regulation, with a focus on the accumulation and non-divisibility of large shares of their patrimonies, especially in the initial phases of their life-cycle. . The opposite would happen in small organizations operating in labour intensive sectors.

Conclusion

This paper strived to reconstruct and reinterpret theoretically the mechanisms of self-financed accumulation of capital in co-operative enterprises, by starting from existing national legislation and organizational forms. The simple heuristics of reserve divisibility versus indivisibility was used as port of entry in building the main arguments, and, eventually, multi-layered structure of capital accumulation was proposed. Different layers, as based on indivisibility and divisibility, and on distribution of net residuals, correspond to different functions in the accumulation and utilization of capital for production purposes. The most fundamental or inner layers undergo stricter constraints, which are aimed at protecting capitalisation, patrimonial stability and external creditorship. The outer or surfacing layers, instead, are aimed at augmenting financial support to investment programs at the margin, and at increasing financial involvement of members and performance.

The former Yugoslav system still represent an important benchmark and the historical starting point against which new proposals are to be evaluated. On the other hand, existing and ongoing legislation in market oriented economies, such as Italy and Spain testify to the potential of co-operatives to thrive and spread in more competitive, mixed economic environments.

Insofar as this system of self-finance shows radical differences relative to both public and private ownership of business enterprises, it can be considered a new and emerging systems of ownership rights, which can represent a third instance and can be named *co-operative ownership*. Of course, the present contribution was not meant to be exhaustive, but just took some initial steps in the definition of co-operative property rights. Other structures characterized by additional properties, functions and regulation can be imagined and developed.

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