

1 Article

2 The Firm as a Common. Non-divided Capital 3 Ownership, Patrimonial Stability and Longevity of 4 Co-operative Enterprises

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9 **Abstract:** Contemporary literature dealing with the governance and exploitation of common-pool
10 natural resources was initiated by Elinor Ostrom in 1990, and has been growing fast ever since. On
11 the contrary, within the same research stream, the study of the presence and economic role of
12 common resources in entrepreneurial organizations is, to date, under-researched. This work
13 endeavors to fill some gaps in this research perspective by: (i) spelling out a new-institutionalist
14 framework for the analysis of the accumulation and governance of common capital resources within
15 organizational boundaries; (ii) considering co-operative enterprises as the organizational form that,
16 on the basis of historical record, and of behavioral and institutional characteristics, demonstrated to
17 be most compatible with a substantial role for common and non-divided asset-ownership and with
18 its governance thereof; (iii) evidencing and explaining the strong connection between cooperative
19 longevity and the presence of non-divided asset ownership. The economic forces influencing the
20 optimal level of self-financed common capital resources in co-operatives are enquired. Conclusions
21 to the paper evidence the main reasons why the new approach can better explain than preceding
22 ones the economic sustainability and longevity of cooperative enterprises.

23 **Keywords:** co-operative enterprises; indivisible reserves; common resources; rivalry; non-
24 excludability; capital accumulation; governance.

25 **JEL classification codes:** P13, P14, P48, P51

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28 1. Introduction

29 Following the growing evidence on the necessity to accomplish environmentally sustainable
30 economic development, the study of the governance and exploitation of natural resources gained
31 prominent role in economics and the social sciences, ever since Elinor Ostrom's seminal contribution
32 in 1990 [1-6]. Common goods are deductible and non-excludable, hence characterized by high degree
33 of rivalry in consumption and/or utilization and, at the same time, by a low degree of excludability
34 for the whole collection of subjects interested in or allowed to use and /or consume the good.
35 Common goods appear as private goods to outsiders, but are common goods for insiders.
36 Common-pool natural resources (CPRs) are studied to highlight the necessity to limit exploitation of
37 fringe and flow resources to a level that does not damage the productive potential of the stock, or
38 core resource. Institutional mechanisms identified in rules regulating access and management are
39 needed to enforce appropriation rights and their limits [7]. This research stream came to concentrate
40 on self-managed common property regimes, which cannot be simply equated either to public or to

41 private ownership, but share some features of both, and have been understood as the most typical
42 way in which natural resources are managed and exploited [1]. More recent literature concentrated
43 on forms of communitarian ownership generating positive externalities as they concern
44 knowledge/cultural commons [3], and urban spaces [8-9].

45 Mechanisms governing the use and exploitation of common resources and the resolution of conflict
46 thereof have been studied and devised to overcome tragedy of the commons situations, as in Garret
47 Hardin classical statement of the problem [11]. Given the rival and non-excludable nature of such
48 resources, conflict over their appropriation and over-exploitation are to be considered endemic due
49 to collective action failure [12]. The technology used and the governance structure are functional to
50 adequately regulating appropriation, by limiting the risk of opportunism and conflict and by
51 punishing the violation of rules of appropriation [12, 13]. Governance, besides limiting the risk of
52 opportunism by the involved parties, is also functional to the coordination of collective action in
53 terms of improved information flows and alignment of expectations [14]. Adequate coordination can
54 be achieved not only by controlling and punishing defectors, but also through proper involvement
55 and deliberation processes based on membership rights and other consultative and participative
56 practices, through improved information circulation, and the creation of organization specific
57 knowledge, culture and social capital [15-17].

58 The analysis of the governance of common resources has been applied to the organizational realm to
59 a notably limited extent. Some streams of literature in law and economics did start this field of
60 enquiry, by defining business corporations as a form of “team production” [18] and by enlarging the
61 concept of corporate governance to include a wide array of mechanisms mitigating risk and
62 uncertainty in contractual relations [19], and to represent the multi-stakeholder corporate
63 embodiment of the social contract [20]. Some authors got as far as identifying corporate dimensions
64 that can be likened to common goods, and business enterprises have been explicitly understood as
65 “commons” themselves [21-9]. Other authors explicitly consider team production and collective
66 action as founding principles of entrepreneurial action and innovation processes in new business
67 environments, highlighting also the special role of intrinsic and prosocial motivations in innovation
68 and growth processes [22-23]. However, to the best of the author’s knowledge, no contribution has
69 systematically analyzed the corporate patrimony within the common property approach, and
70 explicitly discussed, in this line of enquiry, the specific features, sustainability and longevity of
71 “alternative” or “heterodox” enterprise forms, such as co-operative and social enterprises [24-26].
72 Few exceptions of approaches similar to the one followed in this paper are found in some works
73 concerning capital resources in worker co-operatives [27], and co-operative finance [28].

74 This work is directed to widen the existing literature, evidencing the analogies between business
75 corporations and their patrimony with common goods, to study the features and economic functions
76 of common property systems in the study of entrepreneurial ventures, and to evidence the
77 specificities of co-operative enterprises as the organizational form best suited to accumulate common-
78 pool capital resources.¹

¹ Also the working of other organizational dimensions in co-operatives enterprises can be interpreted following the model of common property regimes developed by Ostrom, for example their governance and distributive patterns, but this work concentrates on self-financed accumulation and use of capital only.

79 This paper concentrates on common or non-divided asset ownership as common-pool resource. Co-
80 operative enterprises are identified as privileged organizational contexts since, both in their historical
81 origin and institutional evolution, they have been characterized in most countries by the presence of
82 capital resources that are non-divided and non-divisible among their members. Especially, the non-
83 divisibility of capital is connected with the longevity and sustainability of cooperative enterprises. As
84 it shall be evidenced, incentive alignment and intertemporal solidarity between different generations
85 of members in cooperatives are understood as the main drivers of financial stability and sustainability
86 in the medium to long run.

87 The strategy of the paper is as follows: Section Two deals with the definition, economic relevance,
88 pattern of emergence and optimal dimension of non-divided capital funds in both investor owned
89 companies and co-operative enterprises. In Section Three, the origin and spread of common capital
90 resources in co-operatives is analyzed within a new institutionalist frame by comparing their costs
91 and benefits, both transactional and productive, with the costs and benefits of individually held
92 capital resources. Section Four discusses for better financial sustainability and firm longevity induced
93 by the presence of non-divided capital resources, especially discussing incentive alignment and inter-
94 generational solidarity. Section Five concludes.

95 **2. Common Resources in Investor Owned and in Co-operative Enterprises**

96 One initial key question in this study concerns the reasons why the analysis of common pool capital
97 resources is largely absent in contemporary economics and organization literatures. The proposed
98 answer concerns the dominant system of property rights, whose concentration and exclusivity limits
99 the economic and organizational relevance of communalities in the ownership of enterprises.²

100 The accumulation of owned capital is observed in all enterprise forms since it is functional to
101 financing investment programs, buffering the organization against negative unpredicted events, and
102 serving as collateral required as guarantee of loan repayment. Also, capital resources can be
103 characterized by a positive degree of communality in all ownership forms (public, private and co-
104 operative) when the relevant operative and strategic decisions are taken by a collectivity of
105 controlling patrons (e.g. diffused share-ownership in joint stock companies and publicly listed
106 corporations), since in this case the use of capital resources may not be easily made excludable and
107 the “exit” option can be costly. The utilization of a limited and rival stock of assets coupled with a
108 low degree of excludability in strategic decision making can engender a “tragedy of the commons”
109 situation characterized by free riding in contribution (e.g. distribution of dividends is preferred to
110 reinvestment of residuals) and over-exploitation (e.g. resources are used beyond the collectively
111 optimal point). However, the diversity of organizational forms in terms of control rights and
112 governance can induce important differences in the analysis of the presence and modalities of
113 utilization of common resources. The paper briefly considers investor owned companies (IOFs
114 hereafter) first, and then introduces the case of co-operative enterprises.

115

² Since priority is given to the analysis of the private sector, only investor owned companies and cooperative enterprises are considered in this paper. Occasional references to publicly owned organizations has is introduced for the sake on exemplifying role only.

116 2.1. *Common Capital Resources in Investor Owned Companies*

117 The strictly private nature of capital resources in IOFs strongly reduces as a norm, and often
118 eliminates the relevance communality, since shares are saleable and, in most cases, ownership is
119 concentrated in a few hands. Decision-making becomes exclusive, and excludability in utilization is
120 perfect after contractual constraints have been fulfilled. This is the standard observed solution in
121 small to medium sized firms, and in family businesses, which are dominant in numbers in all
122 contemporary economies.

123 However, even in the case of IOFs, capital resources can acquire a relevant degree of communality
124 when the firm is constituted as joint stock. More specifically, as the number of stockholders increases,
125 and no stockholder achieves dominant position (ownership is dispersed), costly exit due to sunkness
126 of capital resources and investments and to asset specificity can induce a high degree of rivalry in the
127 utilization of resources and in the appropriation of the surplus. In the same situation, non-
128 excludability in decision making, in the utilization of assets, and in the distribution of value added is
129 likely to be high as well.³

130 As said, a high degree of rivalry and non-excludability is to be considered, in IOFs, as exception, not
131 as the rule, due to concentrated ownership. Furthermore, even in the presence of a high degree of
132 non-excludability in decision making and capital utilization, the “exit” option represented by the sale
133 of stocks can allow stockholders to recoup the value of their financial investments. In other words,
134 the sale of owned stocks can be the preferred choice whenever non-excludability in decision making
135 leads to a “tragedy of the commons” situation in which individual preferences conflict with
136 collectively optimal choices, and organizational costs are inflated by the growth of decision making
137 costs. Conversely, stockholders may in many situations prefer concentrated to dispersed ownership
138 since the former solution allows for the elimination of inefficient and costly collective choices when
139 asset specific and non-recoupable investments make the exit option costly. These remarks can explain
140 the prevalence of concentrated ownership in IOFs in most contemporary economies. At the other
141 extreme of the spectrum, sole-proprietorship or closely-held joint-stock are found.⁴

142

143 2.2. *Common Capital Resources in Co-operative Firms*

144 Co-operative enterprises are here understood as mutual benefit organizations characterized by
145 membership rights that are not assigned on the basis of financial investments, but instead to
146 individuals (e.g. in worker co-operatives) or to economic activities (e.g. in producer co-operatives) on
147 the basis of the “one member, one vote” rule [29-30]. Indivisible or common reserves of capital in co-

³ This argument may be even more valid in widely held joint-stock and in publicly quoted companies characterized by fragmented shareholdership, in which no dominant position is detected. In spite of dispersed ownership, the emergent dominant role of the management due to separation between ownership and control can reduce the problems related to communality thanks to centralized decision-making (cfr. The classic by Berle and Means, [70]). The same result would not be possible in co-operatives since, in their case, managers are appointed by members’ representatives, and need to respond more closely to their preferences [46]. In this case, communality and the connected behavioral biases such as free-riding can represent a more serious challenge.

⁴ In an evolutionary interpretation, concentrated ownership can be considered a central autopoietic property of capitalist property rights [71, 72].

148 operatives, when they are present, are owned by the organization itself and cannot be shared among
149 individual members, who enjoy a form of usufruct of the assets, but cannot appropriate them.⁵ The
150 accumulation of indivisible reserves, or asset lock, has the primary function to self-finance investment
151 programs, to create collateral guarantees protecting external financial supporters, and to insure the
152 membership against negative unpredicted events [31-27]. Democratic and participative governance
153 (engendering non-excludability from strategic choices), coupled with the presence of non-divisible,
154 but scarce and deductible capital resources, leads to the emergence social dilemmas that are typical
155 of the utilization of common resources: conflicting objectives in collective decision making can entail
156 substantial governance costs. Costs depend both on rivalry (alternative uses of assets and
157 appropriation of incomes streams may not be mutually compatible, leading to overexploitation of
158 limited resources and conflict) and on non-excludability (since all members have the legal right to
159 participate on an equal basis, collective decision making can become complex, lengthy and contested.

160 *2.3. Ownership Models in Co-operative Enterprises*

161 There are three main ownership system-models of co-operative enterprise corresponding to three
162 different theoretical streams. The first model corresponds to private co-operatives in which
163 membership rights are saleable [33-35]. The second model corresponds to co-operatives in which the
164 assets are publicly owned, and members have the usufruct of the capital of the organization. This
165 model broadly corresponds to the institutional system of the former Republic of Yugoslavia.
166 Alternatively, the cooperative can be completely externally financed, without any ownership in the
167 assets it uses [36-37]. While the Yugoslav system corresponds, in the theory of worker co-operatives,
168 to the so-called Worker Managed Firm (WMF), the externally financed version corresponds to the
169 model of the Labor Managed Firm (LMF). The theory of both model, the WMF and the LMF, was
170 initially developed by Vanek [38] and perfected by Jossa [39-37]. The third model corresponds to less
171 well defined typologies of ownership rights, which some authors have identified in communitarian,
172 or co-operative ownership, and are usually categorized as lying in between public and private
173 ownership [30]. In most variants of this ownership system, which spread especially in continental
174 Europe, the assets of the organization are owned neither publicly, nor by individual members, but
175 by the organization itself, or by the community of reference. The behavioral implications of this their
176 models still await finer definition and enquire.⁶ This paper is set to analyze the problem of
177 accumulation of capital in the third model and in those hybrid systems that include relevant elements
178 of the third model. The main reason is that, among non-state owned models of co-operative
179 enterprises, only non-privately owned co-operatives demonstrated to be compatible with non-
180 divided asset ownership.

181

⁵ In some national systems, however, (e.g. in France) members can appropriate the residual value of the organization upon its dissolution or conversion.

⁶ Mixes between the salient institutional features of the three models are not excluded. For example, the well-known group of co-operatives based in Mondragon, Basque Region of Spain, can be considered a mix of the second and third model.

182 2.4. *Legal Constraints in Western Countries*

183 Institutional models loosely correspond to, but do not coincide with the three theoretical models
184 presented in the previous section. While public ownership of co-operatives is barred by law and by
185 the ICA seven principles, the market for membership shares, even when not excluded by law like in
186 the US, is rarely implemented or excluded by co-operatives' bylaws. On the other hand, several
187 national legislation do not set special constraints against the possibility of the sale and
188 demutualization of cooperatives. Finally, a partial non-profit distribution constraint and the asset
189 lock era required in several countries, for example Italy and Finland, to strengthen patrimonial
190 stability. These are the reasons why existing institutional systems are to be prevalently considered
191 hybrids, which mix to different extents different features of the three theoretical models.

192 In western countries, three main institutional models for the accumulation of capital resources in co-
193 operative enterprises can be singled out.⁷ In the first model, which mainly lies within the common
194 law tradition, reserves of capital are, as a norm, divisible among members. Forms of common
195 ownership are not mandated and, in some cases, excluded by law. Common ownership can be
196 allowed when it is spontaneously introduced by individual organizations in their bylaws. If we take
197 the United Kingdom as the most relevant example of this kind of institutional tradition, we notice
198 that, until recent years, bona-fide co-operative societies registered under the 1965 Industrial and
199 Provident Act were not allowed to accumulate common or indivisible reserves. The possibility to
200 introduce restrictions to divisibility of capital in companies' bylaws was introduced in the reformed
201 2002 Industrial and Provident Act and in the Co-operative and Community Benefit Societies Act in
202 2003. However, at the present stage of legislative development, the possibility for co-operatives to
203 introduce a fully-blown asset lock is still barred by law, while it is allowed in community benefit
204 societies since 2006.⁸

205 The second and the third models are, instead, mainly found within the civil law tradition of
206 continental Europe. In the second model, which includes France and Spain as national cases, law
207 requires the creation of reserves of capital that cannot be shared by members while the organization
208 is active. Such reserves, however, can be appropriated upon dissolution, sale, or conversion of the
209 enterprise. In the third model, which is found mainly in Finland and Italy, compulsory accumulation
210 of net residuals into indivisible reserves is coupled by the prohibition for members to cash in the
211 residual value of the organization also upon its dissolution, sale, or conversion. The two civil law
212 models share similarities, but also important differences. The former is characterized, comparatively,
213 by stronger financial incentives for members, since these can appropriate the residual value of the
214 organization. However, at the same time, the patrimony is less stable since divisibility in case of
215 dissolution or conversion can represent, by itself, the incentive to stop operation and cash in any
216 residual value of the organization [40]. Conversely, the latter model can suffer from too weak
217 financial incentives, as evidenced in the undercapitalization hypotheses by Furubotn and Pejovich

⁷ Web: <http://old.ica.coop/en/whats-co-op/co-operative-identity-values-principles>

⁸ The asset lock regulation for community benefit industrial and provident societies has been in force and available for use since 2006 (The Community Benefit Societies Restriction on Use of Assets Regulations 2006/264). Bencom regulations implement the provisions of the 2003 Act to "lock in" the value of the assets and resources of a community benefit society. (cfr. : <http://www.thenews.coop/32865/news/banking-and-insurance/uk-co-op-law-2010-summary/>) [73].

218 [41], and Vanek [42]. At the same time, this model has been showing a high degree of patrimonial
219 stability since it does not offer incentives to demutualize or sell the organization. In both civil law
220 systems, however, net operating losses can be imputed to indivisible reserves. This possibility can, in
221 principle, weaken patrimonial stability since it is liable to mismanagement and unlawful
222 appropriation.⁹ Finally, in the US context, a similar legal categorization exists, though in this case the
223 main divide is drawn between co-operatives and non-profit organizations. Only the latter are
224 characterized by capital indivisibility, even if legislation does not forbid indivisibility in mutual
225 benefit organizations [43].

226 One final question that has crucial bearing on the working of the institutional system for capital
227 accumulation relates to the ownership of net residuals. In the first institutional system, ownership is
228 clearly attributed to the membership, which has to devise proper rules to distribute or to reinvest it,
229 at its will, in shareable reserves of capital. On the other hand, the second and third system are
230 compatible with the idea that the ownership of residuals, both positive and negative, is attributed to
231 the co-operative as organization. Distribution, which can be limited by law, needs to be deliberated
232 by the elected bodies (the Board of Directors), while the default solution is that residuals are
233 reinvested in the organization in indivisible reserves. While the UK represent an example of the
234 former solution, Italian legislation has instead followed the latter solution, which is more strongly
235 connected with the presence of assets-as-common resources in co-operative enterprises.

236 3. Divisible and Indivisible Reserves of Capital

237 This section goes beyond specific institutional constraints and introduces a new-institutionalist
238 account of the economic motivation and process of formation backing non-divided forms of capital
239 ownership in co-operatives. Building on the framework developed by Hansmann [44-47], the basic
240 category of transaction costs is sorted into the two sub-categories of the net costs of (i) the governance
241 of common resources; (ii) individual ownership of the shares of capital by the members of the co-
242 operative. The costs attached to the two sub-categories are compared in order to single out the
243 optimal level of common resources.

244 Co-operative enterprises can self-finance themselves in two fundamental ways: capital shares
245 individually owned by members; or by resorting to non-divided and non-divisible reserves of capital
246 derived by reinvested positive residuals, which take the form of the asset lock.¹⁰ In the former case,
247 individually owned financial instruments have, in different national contexts, pronouncedly different
248 regulatory features, since they can be differentiated on the basis of yearly yields, dividend
249 distribution and reimbursement rights. Reimbursements rights can take different forms, since such
250 instruments can: (i) be perpetual (not redeemable) and not refundable by the enterprise. In this case
251 they pay annuities to incumbent members [48] and may, under specific circumstances, be sold on the
252 market for membership rights [32, 33, 31]; (ii) be refunded when the member-owner quits the

⁹ The system of capital accumulation in the former Republic of Yugoslavia can be interpreted a radical version of the third civil law system. Under Yugoslav self-management legislation all positive net residuals had to be reinvested in invisible reserves, whose function was to absorb operating losses in the presence of a strict capital maintenance requirement (CMR). The CMR prevented any reduction of the net book value of capital [36, 74].

¹⁰ For the sake of simplicity, such intermediate forms of common ownership, in which indivisible reserves exist, but can be appropriated by members upon dissolution or conversion, are not considered.

253 organization; (iii) be refunded independently of the position as incumbent member under looser
254 temporal constraints [32, 33, 49]. Finally, members can finance their organization also by subscribing
255 member loans or bonds.

256 Members' individual ownership of capital leads to capital variability whenever: (i) the shares need
257 to be paid back to quitting or incumbent members (a situation common in most national systems of
258 co-operative legislation); (ii) the shares are transformed into debt capital upon quittance of the
259 member; (iii) members can sell their shares on the market to non-members. In all these cases (refund,
260 sale or transformation into debt capital of individual shares) the total amount of owned capital is
261 reduced upon quittance. The intensity of capital variability is proportional to the percent of total
262 capital individually held by members, and to the rate of members' turnover. Insofar as it can reduce
263 and/or make uncertain the total dimension of the patrimony and its availability as collateral
264 guarantee, variability can represent a limit to investment processes and to the ability of the
265 organization to borrow from financial intermediaries [31, 40]. By constituting indivisible reserves,
266 locked assets effectively counteract capital variability.¹¹

267 A second function of non-divided ownership is found in the necessity to counteract the risk of
268 demutualization, that is the termination of a co-operative venture through the sale of assets, or
269 through conversion into a IOF. When a large share of total capital is individually owned, its
270 variability, as moderated by the intensity of members' turnover, can lead to undercapitalization: the
271 co-operative would have to refund or transform into bonds or loans substantial shares of owned
272 capital, thus leading to increased dependence on external finance, higher leverage and lower
273 collateral guarantees [31, 40]. When this problem becomes severe, the co-operative can be forced to
274 demutualize in order to increase owned capital (equity) and reduce leverage. Furthermore, co-
275 operative members individually owning large shares of capital can also decide to demutualize in
276 order to cash in the value of their individual assets. They can also acquire unusual and undue
277 lobbying power over strategic decision making processed. This problem is especially severe in best
278 and worst performing co-operatives. In the former case, high value added co-operatives are
279 characterized by market value of individual shares that can far exceed nominal value. This difference

¹¹ In Italy, all typologies of cooperative enterprises (worker, consumer, producer, user, and social cooperatives) are required by law to reinvest at least 30% of their net residual earnings into indivisible reserves of capital, which cannot be shared among members both during the life of the organization, and also upon its dissolution or conversion. This constraint is increased to 70% in the case of cooperative banks. Any residual value is to be transferred to national or regional funds controlled by co-operative associations, which finance the start-up of new co-operative ventures. Empirical evidence shows, however, that a dominant proportion of Italian cooperatives reinvests close to 100% of net residuals into locked assets. That is, legal requirements are not nearly binding. This evidence supports the idea of the existence of an endogenous process of formation of locked assets in cooperatives [27]. Considering a second example, in the Mondragon group of worker co-operatives, net residuals are partly distributed to incumbent members (about 70%, though this percentage has been varying over the years), who are mandated to reinvest their individual shares in internal capital accounts as long as they are members. The remaining share of net residuals (30%) is reinvested into indivisible reserves [31, 49, 57]. Due to shares being paid back when members quit or retire, the total amount of the group assets held in indivisible reserves is, to date, about 50% [75].

280 can represent a powerful incentive to sell out to investors and liquidate the market value of shares.¹²
281 In the latter case, the risk of economic crisis and demutualization can create financial incentives
282 favoring demutualization itself. When the organization fares negative economic and financial
283 conditions, members may be induced to sell out shares or demutualize to reduce expected financial
284 losses, this way accelerating the process of the crisis. These remarks evidence that individual
285 ownership, though it can strengthen financial incentives, is likely to substantially increase
286 patrimonial instability.
287 Demutualization is more common just in those institutional contexts in which individualized
288 members' ownership of capital is dominant, especially in common law, Anglo-Saxon countries (cfr.
289 for example Battilani, Balnave and Patmore [50], on Australia). The relatively smaller number and
290 diffusion of co-operatives in common law compared to civil law countries is better explained by
291 larger numbers of conversion into IOFs, than by higher failure rates [55].¹³ To exemplify, one well-
292 known demutualization wave of co-operatives, mutual insurance companies, building societies and
293 credit unions took place in the United Kingdom during the '80ies and the early '90ies of last century.
294 In continental Europe, instead, where much larger diffusion of (legally mandated) non-divided
295 reserves of capital is recorded, demutualization has less often been observed, and this fact has better
296 supported the sustainability and longevity of co-operatives.¹⁴

297 3.1. Undercapitalization, Common Ownership, and Diffusion of Co-operatives

298 While in civil law countries the accumulation of indivisible reserves is, as a norm, required by law,
299 common law countries, for example the UK, are witnessing in recent years a new trend favoring the
300 diffusion of non-divided forms of capital ownership. Constraints on divisibility, reimbursement and
301 sale of individual shares are often introduced in the bylaws of co-operatives, social enterprises and
302 employee owned companies by conferring either part or the whole patrimony of the organization
303 into locked assets or trust funds [51, 8]. The spontaneous emergence of forms of (partial or complete)
304 common ownership in institutional contexts in which they are not mandated or even favored by law
305 testifies in favor of their substantive economic relevance and of the potential for wider diffusion.
306 The legally imposed accumulation of indivisible reserves showed to be effective in preventing
307 demutualization, but has been repeatedly accused to lead to dynamically inefficient investment
308 choices, implying under-investment and under-capitalization [36, 40, 41]. Undercapitalization due to
309 suboptimal reinvestment of net residuals into locked assets and limited access to financial markets
310 (due to absence of tradable shares) have been taken as implying the self-selection of co-operatives
311 into low-capital, high-labor intensive sectors [52-55]. They have also been taken to explain the low

¹² This has been the reason for the disappearance of the well-known group of lumberjack plywood cooperatives in the US pacific North West: the high market value of the members' financial stakes made the sale of these organizations to external investors more convenient than the sale on the market for membership rights to new incoming co-operators.

¹³ The small total number of co-operatives, economy-wide, is also explained by small numbers of creation of new ventures, not by their short lived active existence, which is indeed longer than the average duration of investor owned companies [55].

¹⁴ In Italy, demutualization is allowed by law only after the demutualizing co-operative renounces the whole value of its asset, which is to be paid out to national funds financing new co-operative start-ups.

312 rate of creation of new co-operative ventures due to limited financial support to new start-ups. On
313 the other hand, the (partial) presence of common ownership in some co-operative forms, especially
314 agricultural and producer co-operatives, that survived and prospered in many countries, and some
315 successful co-operative experiments, such as the Mondragon group speak to the contrary of such
316 interpretation. This counter-evidence leaves open the possibility to pursue new enquiry on models
317 of co-operative finance that are at least partly based on common ownership ([56], cfr. also the works
318 by Jossa [36, 39] on models of externally financed worker co-operatives under public ownership).

319 *3.2. The Emergence of Common Capital Resources in a New Institutional Perspective*

320 The foregoing arguments can be better systematized by analyzing the economic forces, which favor
321 the emergence of an optimal amount of indivisible capital reserves. These forces need to underpin
322 the stability of accumulated capital and of entrepreneurial processes, without renouncing financial
323 incentives to invest optimally and increase productivity. In this, it should be noted, in the most
324 notable and competitive examples of co-operative enterprises and employee owned firms, mixed
325 forms of capital ownership are found. Individualized, non-divided, and mixed forms of capital
326 ownership can be singled out in specific cases. In the Mondragon group, non-divisible reserves of
327 capital coexist with large shares of capital held directly by members in internal capital accounts [49,
328 57]. In the John Lewis Partnership, one of the largest and oldest employee owned firms in the UK,
329 employees' appropriation rights are strictly regulated and limited by the patrimony of the
330 partnership being held in trust funds, which cannot be shared among partners at any time, but which
331 entitle incumbent partners to receive annual dividends. In many employee owned companies, not all
332 the patrimony is held in trust, and the presence of both individually owned shares and trust funds is
333 detected [51]. This evidence suggests that capital in such ownership forms can be decomposed into
334 different parts, which contribute in different ways to the financial health of the organization. The
335 different parts have different functions: while non-divided ownership is mainly geared to guarantee
336 stability to investment processes and collateral guarantees, individual ownership improves financial
337 incentives and performance.

338 In a new-institutionalist perspective it is necessary to ask what are the costs attached to the
339 transactions involved in each of the two forms of ownership, and their optimal dimension thereof.
340 As already anticipated, individual financial instruments are characterized by high transaction costs
341 connected to members' turnover, which in turn depend on members' different temporal horizons of
342 permanence as incumbent members and on heterogeneous members' preferences. When members
343 show homogeneous temporal horizons and preferences, transaction costs connected with
344 membership rights and with individual financial positions are low since homogeneity simplifies and
345 lowers the costs of collective decision making, this way limiting conflict and turnover. These elements
346 favor the permanence of individual ownership, due to the strong match between individual financial
347 incentives and returns [58]. The well-known examples of professional partnerships and of the group
348 of worker owned plywood co-operatives in the US Pacific Northwest in the XXth century share the
349 features of the presence of a highly homogeneous membership performing similar professional and
350 work tasks, and having similar educational levels and personal features [32, 33, 45, 59, 60, 61]. In such
351 cases, non-divided ownership may not be observed, since owned capital and organizational
352 processes are stable even in its absence and members would aim at maximizing financial returns by
353 means of individual ownership [32, 33]. In the framework presented in this paper, members'

354 homogeneous preferences imply that rivalry in the utilization of capital and non-excludability in
355 collective decision making are more easily managed. Since the tasks performed by different members
356 are similar, the number of different uses to which capital can be put is limited and rules governing
357 utilization of resources and the equitable sharing of the surplus are more easily devised and
358 monitored. As complexity and dimension increase, homogeneity fades away, members' objectives
359 become heterogeneous and more difficult to reconcile, this way fostering both organizational and
360 financial instability [45]. Different preferences concerning investment processes, organizational
361 models and distributive patterns, and different temporal horizons make collective decision making
362 less straightforward and more costly, this way increasing governance costs, members' turnover and
363 the risk of demutualization.

364 Insofar as it allows the organization to internalize, control and reduce, by means of administrative
365 procedures, the costs engendered by individual ownership, non-divided ownership represents one
366 possible remedy, which can take back stability to mutualistic financial structures in the presence of
367 complexity and heterogeneity of preferences [28]. However, non-divided ownership can engender
368 costs and inefficiencies of its own.

369 As previously anticipated, underinvestment due to members' truncated temporal horizon, which
370 arises when the median member's horizon is lower than the optimal duration of investment programs,
371 represents the most classical problem concerning non-divided ownership. This problem may be
372 especially serious in worker co-operatives, due to high members' turnover, especially when the
373 median temporal horizon is short and the median age of members is high. It engenders lower than
374 optimal investment schedules and higher than optimal distribution of income and dividends to
375 members, this way leading to under-capitalization and dissolution [38, 40, 41, 42, 62].

376 Under-capitalization due to non-divided ownership can be effectively counteracted in at least four
377 cases: (i) when the rate of return on marginal investment programs is sufficiently high, and/or their
378 temporal duration is limited; (ii) when the temporal horizon of the median member is sufficiently
379 long and new younger members are constantly associated to the co-operative; (iii) when ownership
380 is mixed and individual shares of capital are found side by side with common ownership. In this case,
381 individual shares would finance the marginal (short-term) components of capital [31, 40]; (iii) when
382 members' and/or directors' decisions are informed by social preferences that weigh positively the
383 welfare of future generations of members. In this case, optimal investment schedules are the result of
384 intergenerational reciprocity among different generations of members, since each incumbent
385 generation is favored by the stock of capital bequeathed by previous generations, and favors future
386 generations in a similar way, by bequeathing the existing stock of capital [30]. One further crucial
387 element that can justify the introduction of non-divided ownership, even in the presence of a
388 truncated temporal horizon, has again to do with stability: by reducing the transaction costs
389 connected with individual ownership, non-divided ownership can end up reducing turnover and
390 prolonging the median temporal horizon, this way weakening the impact of the horizon problem.¹⁵

¹⁵ This result can be modelled in game theoretic terms by the trust game [76]. In this interpretation, the present generation of members (trustee or second mover) has to decide how much to keep for itself, and how much to give back (transfer to future generations of members) of the amounts invested by previous generations of members (grantor or first mover).

391 Among the weaknesses of common capital resources, besides the highlighted presence of weak
392 financial incentives and risks of under-investment, the costs and inefficiencies deriving from the
393 spread of conflict over utilization and from opportunistic behaviors, as evidenced in the literature on
394 “the tragedy of the commons”, need to be considered as well [10]. These costs can be high in the
395 absence of adequate regulation [1]. Therefore, non-divided ownership can represent an effective
396 institutional device substituting individual ownership only if the new emerging costs of governance
397 are properly controlled through administrative procedures and other working rules, and through
398 managerial decisions.
399

400 3.3. *The Optimal Amount of Non-Divided Capital Resources*

401 In order to single out the optimal or preferred amount of non-divided resources, the advantages
402 deriving from common ownership need to be compared with their costs, and with the corresponding
403 costs and benefits attached to individual ownership.

404 The comparison of costs and benefits is complex as it requires analysis of transactional, operational,
405 and welfare generating or depleting dimensions. However, this comparison offers a vantage point
406 from which empirical research can depart. The equilibrium between common and individual
407 ownership derives from the balance between two categories of net costs attached to the two different
408 ownership regimes:¹⁶

409 (i) costs deriving from the governance of common resources (excess of utilization and depletion of
410 assets, monitoring, conflict and decision making costs), plus efficiency losses in terms of suboptimal
411 investment decisions (horizon problem) and absence of highly powered financial incentives. Costs of
412 governance include lengthy and inconsistent decision making processes, conflict over rules
413 governing and decisions concerning use of resources and distribution of proceedings, monitoring
414 activities, inefficient choices which privilege the median voter preferences over average preferences,
415 costs of lobbying by dominant groups of members;

416 (ii) costs deriving from contractual imperfections attached to individual ownership, which can
417 engender organizational impasse due to absence of agreement on collective choices, high turnover
418 leading to disinvestments processes, and de-mutualization. Absence of agreement can derive from
419 conflict over strategic decisions concerning alternative investment plans and their temporal horizon,
420 resource allocation and utilization, trade-offs between individual appropriation of proceedings and
421 collective decisions concerning investment plans.

422 When the balance between these two categories of costs leads to the emergence of a relevant amount
423 of common capital resources, governance becomes the crucial organizational dimension regulating
424 the internalization of contractual costs and control over the emerging governance costs [63-64]. It also
425 bears relevant implications on the alignment of members’ preferences with organizational objectives.
426 The non-divisibility and non-salability of common assets, when decision-making and conflict costs
427 are kept under control, can lead to better alignment, and have empowering effects on collective action.

¹⁶ A detailed comparison of the benefits attached to different ownership forms is outside the scope of this paper, which is limited to the cost side.

428 Alignment, in the case, is the result of reconstitutive downward effects that tend to modify and refine
429 individual preferences to make them compatible with collective ones.¹⁷
430 In an evolutionary interpretation, common ownership represents an emergent feature of collective
431 action by members associated in co-operative ventures. This emerging institutional solution
432 overcomes individual ownership and the attached contractual costs in the presence of complex and
433 heterogeneous members' preferences. In more general terms, the interpretation of entrepreneurial
434 action as exclusively attached to and explained by individual behavior and preferences is not granted
435 and more, but it is instead overcome in favor of new emerging forms of collective entrepreneurial
436 action [65-67].¹⁸
437

438 **4. Sustainability and longevity**

439 One of the most salient consequences of the introduction of capital indivisibility is better financial
440 and economic sustainability due to patrimonial stability, and increased longevity of co-operatives.
441 Contrary to the predictions of the best-known models in economic theory [38, 41], capital
442 indivisibility does not lead to short termism, degeneration, and dissolution. Indeed, co-operatives
443 have been shown to last longer than IOFs [55]. Instead, and in line with prevalent empirical evidence
444 [55, 73], the exclusion of the possibility to demutualize and sell the assets of the organization, the
445 internalization of and control over costs deriving from contractual imperfections, and the better
446 alignment between individual preferences and organizational objectives appear to favor longer term
447 resilience. Better sustainability and resilience is especially evidenced during periods of crisis, since in
448 the last ten years, in several countries, co-operatives withstood the strong downturn in demand better
449 than IOFs. They also laid-off less workers than IOFs, thanks to fluctuating wages and to the insurance
450 function played by the non-divisible component of capital [27, 68, 69, 73].
451 The arguments of this paper showed that indivisibility of capital is likely to lead to better stability of
452 the patrimony, since common capital resources cannot be shared by members and are to be
453 considered ownership of the organization itself. The prohibition of members' appropriation
454 profoundly changes incentives, expectations and behaviors. When new members enter the
455 cooperatives, they know they cannot appropriate its patrimony. Different institutions cause
456 differential ex-ante selective processes: members desiring to appropriate the economic value of the
457 organization are likely not to join this kind of associative venture in the first stance. Existing members
458 (new and incumbent) accept a fundamental associative pact, a social contract, in which appropriation
459 of the patrimony is excluded. By subscribing the associative pact, they only expect economic
460 (monetary and non-monetary) remuneration deriving from mutual benefit, but not financial
461 remuneration attached to capital shares. The associative pact also implies acceptance of

¹⁷ On the concepts of reconstitutive downward causation and reconstitutive downward effects, cfr. Hodgson [78]. This argument, of course, does not exclude effects running in the opposite direction, since individual members' preferences in co-operatives can influence organizational objectives through participation in decision making processes and other organizational patterns.

¹⁸ A non-reductionist interpretation of collective action and institutions as emergent social dimensions, which cannot be explained in terms of individual behavior alone, but are nonetheless anchored to individual behavior, is found in prominent contributions to institutional and evolutionary economics [1, 77].

462 intergenerational solidarity. Incumbent members know that the existing patrimony was accumulated
463 by previous generations of members, and that future generations will enjoy similar benefits after their
464 own quittance. The ex-ante working of the associate pact in cooperatives guarantees static and
465 intertemporal stability, which is closely connected with longevity. Co-operatives that do not undergo
466 economic crisis and financial distress can expect their patrimony to be preserved, virtually without
467 limitation, even in the presence of internal heterogeneity of preferences. In turn, the impossibility to
468 appropriate the patrimony in case of internal dispute lowers the probability of disputes arising in the
469 first stance, since no individual member or group would obtain any monetary advantage from it.

470 5. Concluding Remarks

471 This work represents an attempt to reformulate the problem of the ownership of capital in co-
472 operative enterprises by analyzing it in a new perspective, which looks at how common or non-
473 divided capital resources can, when properly regulated, bear productive and welfare increasing
474 potential, and not necessarily represent an anomaly in or obstacle to the correct development of
475 entrepreneurial organizations. This new viewpoint can allow taking some steps towards in
476 overcoming well-known negative results (e.g. concerning under-investment and under-
477 capitalization, demutualization and dissolution), which did not advised to date the spread of this
478 kind of similar institutional solution.

479 The paper strived to explain, within the new-institutionalist frame of analysis, the pattern of
480 emergence and spread (both spontaneous and legally mandated) of non-divided reserves of capital,
481 interpreted as deductible and non-excludable assets, and to identify the main economic forces
482 defining their optimal level. The answer has been found in the complex comparison between the
483 transactional and operational costs attached to individualized vis à vis common reserves of capital.
484 A strong compatibility and linkage between collective entrepreneurial action in co-operative
485 enterprises, and the emergence of non-divided forms of ownership has been evidenced.

486 The main implication of this work is that common resources, when tragedy of the commons-like
487 social dilemmas are overcome, can represent a fundamental and empowering tool allowing members
488 to achieve higher welfare, both monetary and non-monetary, and empowerment. As already
489 evidenced in the literature analyzing the collective governance of common-pool natural resources,
490 members (appropriators) and their representatives are in the best position to work out the most
491 effective governance solutions, due to better information, knowledge and experience concerning the
492 specific circumstances of the resource. While the paper focuses on the similarities between the
493 governance of CPRs and the governance of non-divided capital in co-operatives, differences should
494 not be forgotten as well in its implementation, since they can help identifying critical institutional
495 elements, and welfare increasing dimensions that are absent in the case of natural resources. The
496 main directions for future research seem to relate to the development of the legal definition and
497 regulation of common property systems in co-operative form of ownership, including both non-
498 divisible and divisible capital reserves [56].

499 The main implication of the study concerns the impact of common ownership on patrimonial stability
500 and on the sustainability and longevity of co-operatives. While existing models are not able to explain
501 in a satisfactory way the survival, diffusion and longevity of organizational forms characterized by
502 common ownership, this paper has found strong connection between these two elements. The

503 connection is substantiated by the better patrimonial stability in co-operative characterized by the
504 presence of non-divided and non-divisible capital resources.

505

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523

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