The economics and finance of dividend-based labor remuneration and tradable shares in worker cooperatives

TORTIA, Ermanno

University of Trento, Department of Economics and Management

29 July 2025

The economics and finance of dividend-based labor remuneration and tradable shares in worker cooperatives

Ermanno C. Tortia

University of Trento, Department of Economics and Management

Email: ermanno.tortia@unitn.it

Abstract

This paper examines the economic and financial implications of implementing a comprehensive system of dividend-based labor compensation for members of worker cooperatives. The economic implications, as presented in the existing literature, are discussed at both the microeconomic and macroeconomic levels, as already presented prominently in the work of James Meade and Martin Weitzman. The financial implications concern the creation of a clear link between dividend-based remuneration and the financial position of worker-members as owners of a cooperative's capital; the alignment of interests between worker-members and non-member financial investors when creating a true cooperative share market; and the decoupling of financial participation of members and non-members from control rights (cooperative shares would be non-voting) to protect the formal and substantive role of the mutualistic 'one member, one vote' principle of democratic governance.

Key words: dividend-based labor remuneration; undercapitalization; cooperative shares; interest alignment; cooperative property rights; mutualistic governance.

1. Introduction

This paper aims to work out new operational solutions linking dividend-based remuneration and tradable shares in worker cooperatives. The idea of fully tradable shares with dividend-based labor remuneration (which do not provide for any fixed return, but only dividend payment and capitalization of share price value) is, at the moment, more theoretical than practical, but is being analyzed as a potential way to address capitalization challenges and improve worker incentives. Few worker cooperatives have explored the possibility of issuing non-voting shares that offer a fixed dividend to outside investors to raise capital while maintaining worker control (Zevi, 1984; Tortia, 2025).

Our discussion begins by reconstructing the labor managed firm (LMF) economic model, discussing it from the perspective of dividend-based labor remuneration, which fundamentally sets it apart it from investor-owned companies. In the second part of the article, we attempt to link dividend-based remuneration with financial participation and employee ownership in order to discuss the possibility of obtaining a market valuation of members' financial participation. When members' financial participation is not traded on a market, its value can be obtained using traditional valuation methods, such as discounted cash flow capitalization, EBITDA multiples, and NAV (net asset value). When there is a capital market, expected future profits determine the price of workers' shares. The final part of the paper discusses the possibility of issuing shares sold to external non-member investors.

The neoclassical model of the LMF (Ward, 1958; Domar, 1966; Vanek, 1970, 1977; Meade, 1972, 1989, the WDVM model below) sought to understand its behavioral responses to market stimuli (changes in product prices and market interest rates). The WVDM model forms the theoretical basis for empirical and legal studies of worker cooperatives in Western countries, describes LMFs as enterprises in which employees have primary control and the right to make decisions, including the appointment and dismissal of managers. Worker-members of LMFs usually, though not necessarily, have residual rights, meaning that they share in the profits or losses of the enterprise. Consequently, in real-world worker cooperatives, ownership and control are vested in the worker-members.[1]

[1] Ward's (1958) seminal work laid the foundation for LMF theory. His model suggested that an LMF might exhibit a "perverse" supply response, potentially decreasing output when prices rise because existing worker members aim to maximize income per worker. Domar (1966) developed the theory further, exploring the implications of different

This theoretical model assumed worker control over the organization that employs them. Worker control implies both appropriation of the fruits of their labor and control (or ownership) of the capital they use, as stated in Locke's theory of ownership of labor (1690) (see Ellerman, 2021). While control can improve productivity and well-being by allowing workers to make all relevant decisions related to production, ownership of capital can strengthen financial incentives to increase productivity while avoiding the risk that workers' productive capacity will be exploited by external actors (e.g., investors or the state), whose interests are not aligned with those of the workers (Bowles and Gintis, 1993).

In the WDVM model, workers' remuneration can be understood as a dividend derived from the organization's net income, a share of residual profits, similar to how shareholders receive dividends in a traditional capitalist enterprise. This implies that a significant portion or all of a worker's remuneration may vary according to the company's performance, rather than being a fixed salary (Tortia, 2025). Dividend-based remuneration in LMFs introduces a key element of flexibility into worker remuneration that acts both as an economic incentive, since workers know that higher productivity will be matched by higher remuneration, and as an insurance device, since when the company's economic performance deteriorates, flexible remuneration can more easily absorb negative shocks and reduce the risk of layoffs (Navarra and Tortia, 2014; Albanese, Navarra, and Tortia, 2015; Tortia, 2024).

In this context, the introduction of tradable shares, a complex and less common solution than traditional companies, would represent an extension of the basic model. If worker members hold tradable shares representing their ownership stake, this could enable the creation of a market for these shares as members join and leave the organization. However, as discussed in the following sections, the specific structure and implications of this type of instrument in an LMF can vary significantly and raise questions about maintaining worker control and the cooperative nature of the enterprise (Mikami, 2016, 2016; Tortia, 2025).

After the theoretical introduction to the neoclassical model of the labour-managerial firm, Section 2 analyses the macroeconomic implications of the Ward-Domar-Vanek-Meade model

---

organizational structures and property rights in the context of labor-managed systems. Vanek (1970) added new comprehensive contributions by developing a general neoclassical model of the “Illyrian firm” and of the “labor-managed economy”, analyzing its macroeconomic properties and comparing it with capitalist economies. Meade's (1972) contributions focused on formal modeling of efficiency and capital accumulation in these firms.

concerning the work of Martin Weitzman and James Meade. Section 3 presents and analyses existing work on tradable shares in worker cooperatives. Section 4 discusses the main issues and problems related to dividend-based labour remuneration and tradable shares in worker cooperatives, while Section 5 develops a new proposal in this area and discusses its practical application in real-world cooperatives. Section 6 concludes.

2. Theoretical and macroeconomic implications of dividend-based labor remuneration on the LMF model

The works of James Meade (1972, 1986, 1986, 1989) and Martin Weitzman (1986) on the macroeconomic implications of flexible labor remuneration (flexible wages) can provide further theoretical background, from which new elaborations can be initiated and new financial tools devised. James Meade's work on labor-managed firms (LMF, 1978) and the capital-labor partnership (1986, 1989) connects with the ideas of shared returns and potentially tradable shares, although his approach was broader than worker cooperatives.

Meade (1986, 1989) discusses various ways of organizing firms and remunerating workers, extending beyond traditional wage systems, particularly to achieve full employment and equitable distribution. His concept of capital-labor partnership implies that workers receive income not only from wages, but also from the returns of a collectively owned capital stock. In Meade's model, income derived from “national assets” could be considered analogous to dividends, providing workers with a share in overall economic productivity beyond their direct labor contribution. Although Meade was not primarily focused on privately owned worker cooperatives, his vision of a broader distribution of capital ownership and returns could theoretically align with mechanisms that allow for the transferability of members’ financial stakes in the firm's collective capital. If workers held shares representing their capital stakes, these could potentially be tradable.

In the work of Martin Weitzman (1986), the “share economy” refers to the concept of remuneration of labor based on dividends, rather than a fixed salary. In the share economy, part (or all) of a worker-member's remuneration is directly linked to the financial performance of the enterprise (through profit or revenue sharing), distributed in the form of dividends based on their labor contribution and, potentially, equity participation (if shares exist). Linking worker compensation and a firm's profitability could be a key mechanism for combating stagflation and promoting full employment.

Weitzman (1986) argued that a share economy based on flexible labor compensation creates a continuous incentive for firms to hire more workers even during periods when traditional wage systems might lead to layoffs or stagnant employment because the cost of labor becomes more variable and is directly linked to output. If the average cost of labor falls as more people are employed, then the marginal cost of hiring an additional worker is necessarily lower than the current average cost. Compensation tied to the firm's performance (e.g., profits or revenue) and greater flexibility in labor costs could make the economy more resilient to shocks and help combat stagflation (high inflation combined with high unemployment) by fostering greater employment stability and potentially lower unemployment rates (Origo, 2009). Weitzman (1986) contrasted the share economy with traditional fixed-wage systems, which can lead to unemployment during economic downturns due to the rigidity of labor costs.

In a worker cooperative, dividend-based pay could translate to a stronger incentive for the cooperative to expand and for worker-members to be productive, as their earnings directly benefit from increased productivity. Flexibility in labor costs would make worker cooperatives even more resilient and stable during economic fluctuations than they already are nowadays (Navarra and Tortia, 2014; Albanese et al., 2015).

These theories discuss alternative business structures and remuneration models that emphasize worker participation, profit sharing and partnership as a means to achieve greater economic stability and potentially more equitable outcomes (both microeconomic and macroeconomic). They come close to (but stop short of) explicitly discussing ownership stakes (including for workers) that might be negotiable, introducing a market element into the cooperative or LMF capital structure. These alternative models can work effectively within, and potentially enhance, a broader market economy, including aspects such as transferability of shares. The underlying objective of much of this work is to prioritize organizational systems that are resilient to shocks (such as stagflation) and lead to more equitable outcomes for workers.

2.1. Dividend-based labor remuneration and stagflationary crisis

During a macroeconomic stagflationary crisis, typical tools used to combat inflation (such as raising interest rates) can worsen unemployment and slow growth, while measures to boost growth and reduce unemployment (such as increasing government spending or lowering interest rates) can exacerbate inflation. Regarding stagflation, Meade's (1979) work directly addressed the causes and consequences of the stagflation that affected many economies in the 1970s. He

emphasized the need for reform of wage-setting institutions. Meade contrasted the Great Depression with the stagflation of the 1970s, arguing that the way wages were determined played a crucial role in the latter. Fiscal, monetary and exchange rate policies were designed to effectively manage the demand for labor by managing demand and creating dynamic economic models.

Meade's analysis led to policy recommendations aimed at controlling inflation without causing unacceptable levels of unemployment, exploring various wage moderation mechanisms and the role of government in managing aggregate demand. To achieve full employment, Meade (1989) proposed the “labor-capital partnership,” in which workers would receive income not only from wages, but also from dividends based on national assets accumulated through government surpluses. This idea was intended in part to decouple income from potentially rigid wage structures that could contribute to unemployment in periods of low growth and inflation.

Weitzman (1986), for his part, proposed a “share economy” as a possible solution to stagflation. According to his approach, one of the main causes of stagflation was the common practice of paying workers a fixed wage, regardless of the company's performance. Weitzman (1986) proposed an alternative labor compensation system in which a significant portion of firms would share profits or revenues with their employees, similar to the bonus systems in some countries such as Japan. Under such a system, firms would have a continuous incentive to hire more workers, because the cost of an additional worker would be a part of the increased revenue or profit they generate, rather than a fixed cost. This would lead to a natural tendency toward full employment. At the same time, labor cost flexibility would make the economy more resilient to inflationary shocks. Weitzman theorized that, by linking worker compensation to firm performance, the share economy would mitigate the problem of “excess demand for labor,” which can lead to unemployment. Firms would always want to hire more labor, as long as it contributed to overall revenues or profits.

Weitzman (1986) counterposed the share economy to the traditional fixed wage system, where firms might hesitate to hire during economic downturns due to fixed labor costs, which could lead to unemployment and stagflation. While Meade (1979) focused on reforming wage-setting institutions and using macroeconomic policy tools to manage demand so that both inflation and unemployment could be controlled, Weitzman (1989) proposed a fundamental change in the way labor is remunerated, advocating profit or revenue sharing models to create an inherent incentive for full employment and greater economic stability in the face of potential stagflationary pressures.

In this context, tradable shares, combined with dividend-based remuneration, can provide strong financial incentives to worker-members, aligning their interests more closely with cooperative performance, mitigating free riding and boosting productivity. The introduction of tradable shares in cooperatives can enable capital to be raised from both members and outside investors, whereas reliance on member contributions and collective capital, which does not sufficiently incentivize financial investments, can lead to undercapitalization (Furubotn and Pejovich, 1970). In addition, the flexible nature of dividend-based pay (as opposed to fixed wages) can improve the cooperative's resilience to economic downturns, which can lead to greater member job stability and optimal growth linked to new member association during downturns when dividends are lower, as in Weitzman's (1986) share economy model.

In a macroeconomic context, a significant presence of firms with dividend-based labor compensation and flexible cost structures could have attractive effects. In periods of economic slowdown or demand shocks, these firms may be able to adjust labor costs more easily (through lower dividends) than firms with fixed-wage contracts, potentially leading to less pressure for layoffs and more stable aggregate supply. In inflationary environments, particularly stagflation, the link between firms' performance and workers' income through dividends could dampen wage price spirals. If firm profitability is constrained during stagflation, dividends are likely to be lower, potentially reducing upward pressure on labor compensation and consequently on prices. Tradable shares could also improve the efficiency of capital allocation, allowing market mechanisms to evaluate cooperative firms and attract investment based on their performance and potential. During economic downturns, share prices would be lower, attracting financial investments that could recapitalize struggling firms.

For Meade (1986, 1989), the introduction of tradable shares and dividend-based remuneration could address some of the traditional theoretical concerns about worker-managed firms, such as their investment incentives and their responses to market fluctuations. Dividend-based pay in worker cooperatives would also align with Weitzman's (1986) theoretical approach to profit-sharing as a macroeconomic stabilizer, as a significant portion of labor compensation would be tied to firm profits, leading to more stable employment and potentially lower inflation. The potential of dividend-based remuneration and tradable shares to link members' remuneration to their financial participation and attract external capital may increase financial incentives, improve motivation and promote labor stability in the cooperative framework (Tortia, 2022, 2025). Dividend-based labor compensation with tradable shares leverages the motivational benefits of

ownership and financial participation, while addressing the capital constraints that worker cooperatives often face. In stagflation scenarios, greater labor cost flexibility would lead to positive inflation dynamics and employment stability at the macroeconomic level.

3. Dividend-based remuneration and tradable shares in worker cooperatives

As in the Ward-Domar-Vanek-Meade model of the labour-managed firm, when members of a worker cooperative are remunerated with residual earnings shares, the variability of labour compensation can be expected to be high, which, in turn, leads to uncertainty in labor income profiles. On the other hand, variability also represents a powerful economic incentive to increase productivity and achieve efficiency, as members' income becomes closely tied to the economic performance of the organisation. In addition, variability also significantly reduces the risk of layoffs during economic downturns, as the decline in firm earinings would be matched and offset by the decline in labour income, thus eliminating the need for layoffs. The nature and implications of income variability in LMFs have been analysed by several authors, starting with the initial contribution of Miyazaki and Neary (1983), who evidenced the insurance function of flexible pay in worker cooperatives (cf. also Navarra, 2011, 2016).

Empirical evidence tends to confirm that worker cooperatives in market economies pay flexible labour income to members, although in most cases, also depending on national legislation and internal statutory regulations, income payments are identified as ‘wage payments’ and not as value-added or residual earnings dividends. Empirical analysis has largely confirmed the theoretical predictions, as labour income in worker cooperatives is in fact more variable than in investor-owned enterprises, while employment is more stable, mainly due to the variability of members' incomes (Berman and Berman, 1989; Craig and Pencavel, 1992, 1994; Pencavel, Pistaferri and Schivardi, 2006; Burdin and Dean, 2009; Borzaga, Carini and Tortia, 2022; reviews are found in Bonin, Jones and Putterman, 1993; Pérotin, 2013).

On these premises, it is possible to introduce and study an alternative model in which workers' remuneration depends directly (and exclusively, in the most extreme versions of the model) on the cooperative's residual income, just as shareholders in a traditional company receive dividends from residual income after deducting the cost of labor and of capital (Mikami, 2016, 2025; Tortia, 2025).

3.1. Tradable shares in worker cooperatives

When members appropriate the entire residual income of the organization, their remuneration can be quantitatively linked to the value of their financial participation (shares held, Mikami, 2025; Tortia, 2025). The direct link between workers' remuneration and the cooperative's results can potentially increase motivation and productivity. At the same time, in a period of economic recession, the absence of fixed salaries can offer greater flexibility and potentially avoid layoffs, promoting resilience to adverse economic conditions. The alignment of interests between the objectives of members and those of the organization blurs the distinction between employer and employee, promoting a sense of belonging and shared responsibility (Mikami, 2025; Tortia, 2025).

Since income can vary significantly depending on the financial performance of the cooperative, the main challenges associated with dividend-based remuneration are related, first of all, to the need to keep under control the financial health of the cooperative and the distribution mechanisms of residual income. In this respect, it may be relevant to recall that the existing theoretical literature tends to show that worker cooperatives make more risk-averse decisions than investor-owned enterprises, especially investment decisions, and show less risky behaviour, mainly due to the need to preserve job stability and avoid the danger of redundancies (Albanese, 2003; Borzaga et al., 2021).

3.1.1. The state of the art on tradable shares in worker cooperatives

A growing body of research explores innovative economic models that merge cooperative principles with market mechanisms. Mikami (2016, 2025) and Tortia (2025) are actively studying how worker cooperatives can use flexible remuneration systems (such as dividend-based compensation) and incorporate tradable shares, navigating the opportunities and challenges this presents within a market economy. This research expands previous concepts such as Weitzman's “Share Economy” and the understanding of how such structures can contribute to economic stability, performance, and worker empowerment, as the integration of dividend-based labor compensation with marketable shares can create a consistent and incentive-compatible model. The incentive compatibility is mainly due to the fact that worker-members of cooperatives would seek higher incomes and, in order to achieve them, would accept a higher degree of risk and increase productivity. On the other hand, in negative economic conditions they would also accept lower incomes in order not to lose their jobs, knowing that, in the absence of competing interests

with employers, their incomes would increase again as soon as the cooperative's economic conditions improved (Pérotin, 2013; Navarra and Tortia, 2014; Albanese et al. 2015).

Some authors studying the group of plywood cooperatives in the U.S. Pacific Northwest began to analyze how members' tradable positions in a market for membership rights can connect members' income to members' share ownership, which, however, in that case, was only tradable between incoming and outgoing members, and not in an open financial market intended to include outside equity investors as well (Berman and Berman, 1978; Dow, 1986, 2003, 2018). Similarly, the same authors have also devoted attention to the theoretical and institutional implications of introducing a market for membership rights (Dow, 1986, 2003, 2018; Mikami, 2016, 2018, 2025).

In Dow's (1986, 2003, 2018) theoretical work on labor-managed firms, workers in this type of organization are both employees and owners. Therefore, the return on their “equity” (their ownership stake) is not only a financial dividend, but is also intrinsically linked to their labor income. The residual control rights of the members make their labor income, especially the profit share, a direct reflection of the company's performance. When members' or cooperative shares are tradable, a market price arises for these shares. However, unlike shares in conventional companies, profits in an LMF are not only financial dividends. They also include the right to work in the company and receive labor income, in particular the profit-sharing component. If a significant portion of the profits is distributed as labor income or bonuses, then a share that grants membership and access to this income stream will be more valuable. The market value of the share may also reflect the stability and quality of employment, the present value of redeemable capital accounts where they exist, the financial value of voting rights and the influence on company decisions.

Since the market price of a tradable share of an LMF capitalizes not only the financial return on capital, but also the implicit value of the stream of labor income earned by a worker-member, this represents a radical departure from conventional firms, where labor income (wages) is a cost and not a direct benefit linked to share ownership. Since the market for these shares becomes a mechanism for capitalizing the total economic benefits of a membership position, and not just the financial returns, a unique dynamic is created in which the “price” of being a worker-owner reflects both the direct financial participation and the capitalized value of the expected labor income stream and other benefits associated with membership. In short, residual labour income absorbs, and merges with, labour costs.

Similarly, in the work of Mikami (2016, 2018, 2025), the dual role of members in worker cooperatives as labor providers and capital contributors creates a unique interaction between their labor income and their financial stake. In this context, when membership rights and cooperative shares are tradable, the market for these shares acts as a crucial link between labor income and members' financial position through the capitalization of future labor income. Expected future income is capitalized into the value of marketable shares. If a cooperative generates consistently high profits and distributes high labor income in the form of dividends, the value of the cooperative's shares may appreciate. The right to work in that enterprise (represented by the share) becomes more valuable, and potential new members may be willing to pay a premium price if higher earnings are expected in the future.

In addition, the negotiability of shares provides an exit mechanism for departing members and an entry mechanism for new members. When a worker-member leaves the company, he can sell his shareholding, realizing the financial value accumulated during his tenure. This value may reflect not only his or her initial capital contribution, but also a portion of the accumulated wealth of the enterprise and the capitalized value of the right to earn labor income within the cooperative. Conversely, new members may have to purchase a share to join, acquiring the right to contribute labor and receive their associated income and profit distributions. The alignment of risks and rewards (both positive and negative) incentivizes members to increase productivity and contribute to the firm's competitive position in the marketplace, as their financial well-being is directly linked to these dimensions. Thus, tradable shares contribute to the long-term financial health and sustainability of cooperative enterprises.

Mikami's (2016, 2025) research directly addresses the intersection between cooperative models and the dynamics of market economies, particularly concerning share ownership, to understand how cooperatives can integrate with broader market principles without compromising their core values. According to this author, tradable shares, or saleable ownership stakes, in various types of cooperatives, including worker-owned cooperatives, can serve as a mechanism for capital acquisition, addressing the common problem of undercapitalization. By allowing the buying and selling of shares, cooperatives can attract investment from both members and outside parties. Tradable shares can align the incentives of incoming and outgoing members, contributing to the efficiency and long-term sustainability of the cooperative. Corporate law needs to be adapted to facilitate the issuance and trading of cooperative shares as in investor-owned companies. Legal

and regulatory structures need to be designed to support the efficient operation of systems tradable shares in cooperatives (Mikami, 2016).

Tortia (2025) specifically analyzed the feasibility and implications of remunerating worker-members primarily through dividends based on the residual income of the cooperative, rather than fixed salaries. Tradable shares are one way to address the undercapitalization of worker cooperatives by allowing shares to be issued to both members and non-member outside investors. By linking dividend payments to the value of the members' financial stake in the cooperative's capital, the aim is to strengthen financial incentives to increase the collective performance of the cooperative and to align the financial interests of members with the incentives of potential external investors, who could be remunerated with the same dividends and own the same shares as worker-members. The flexibility inherent in dividend-based remuneration can contribute to greater labor stability within worker cooperatives, as labor income can be adjusted in line with the cooperative's economic performance.

4. Tradable shares in worker cooperatives

The analysis derived from the WDVM model did not pay sufficient attention to the financial implications of income distribution patterns in LMFs. The combination of dividend-based labour remuneration and tradable shares in worker cooperatives can strengthen the link between worker contributions and financial returns, while addressing the financial constraints that these organizations often face. However, it also introduces complexities related to the governance, control, and mission of the cooperative. While the standard worker cooperative model foresees remuneration based on wages and non-tradable shares, dividend-based compensation is closely linked to the idea of tradable shares. Growing debate and experimentation with alternative financial structures show that, if worker-members are compensated mainly through dividends, their capital shares can essentially represent their share in the returns generated by their work and in the cooperative's capital. In this case, tradable shares could make worker financial participation more liquid and potentially more attractive.

The obligation of cooperatives to buy back members' shares when a member leaves or retires weakens the financial strength and stability of the cooperative, leading to undercapitalisation or time horizon problem (Furubotn and Pejovich, 1970; Tortia, 2018, 2021). This may be one of the main reasons why many cooperatives end up resorting to indivisible reserves, as they do not have

to be reimbursed to members in case of termination (Tortia, 2028, 2021). Although indivisible reserves have the positive feature of ensuring long-term capital stability, they do not provide sufficient incentive for investment, as the cooperative's growth is mainly financed by collective retained earnings and members' contributions (in addition, of course, to bank loans).

The introduction of tradable shares would allow cooperative members to own financial stakes in their enterprise, which would significantly strengthen the financial incentives to invest in it and also increase productivity, potentially overcoming the problem of under-investment (Furubotn and Pejovich, 1970). In principle, these shares could also be sold to external investors, which would further contribute to achieving optimal capitalization. If shares are sold on the market, it would eliminate the obligation for the cooperative to redeem them at face value when members leave, which would further reduce financial weaknesses, especially with the ageing and retirement of active members. Financial weaknesses would also be combated during economic downturns and financial problems, when many members may leave in search of better external options.

Raising capital from a larger number of investors would tackle undercapitalisation, a common challenge for worker cooperatives. The possibility to realize the value of their shares when members sell some or all of their shares or leave the cooperative would improve the availability of liquidity. In addition, a market-based valuation of the cooperative would increase clarity in determining the value of the cooperative's assets, select the best-performing organizations in the medium and long term, and incentivize market participants to make strategic investments that can increase the future performance of the organization. The last section of this paper will look specifically at how the tradability of co-operative shares can be realised in practice.

The downside is that outside investors holding shares may seek to influence the cooperative's decisions, potentially diluting democratic worker control. This major problem, however, can be addressed by issuing non-voting shares that are allocated to investors (and, as it shall be seen, also to worker members), while worker members would retain control of the organization through the mutualistic “one member, one vote” rule. Second, the introduction of tradable shares could attract investors focused primarily on financial returns, potentially leading to prioritizing profit over the social mission of the cooperative. However, if outside investors can only acquire non-voting shares, control is retained by cooperative members who pursue the cooperative's social missions and adhere to the cooperative's principles and values. In the case of non-voting shares, the dilution of the cooperative's social mission may be limited or irrelevant. Finally, it is important to note that cooperatives issuing tradable shares to outside investors would face additional legal

and administrative burdens, which can significantly increase transaction costs. Transparency, accountability, regulatory compliance and public availability of all key financial data would become even more important to overcome investor resistance to finance cooperatives through non-voting equity ownership.

4.1. Systems of individualized financial participation in worker cooperatives

Building on the elaboration of Dow and Mikami, and also following an earlier work by the author (Tortia, 2025), this paper analyses some new mechanisms that could allow cooperatives to issue and sell their shares not only to members, but, in principle, also to external non-member investors.

This new proposal is strongly anchored in and revolves around the fundamental economic element of dividend-based remuneration of labor, since this is the basic characteristic that can accommodate all organizational forms that can be defined as worker cooperatives. As is well known, only a tiny minority of all enterprises are listed on a public stock exchange, and a small minority of enterprises have their capital or part of it traded on private equity markets. These proportions are even tinier, or non-existent, in the case of worker cooperatives, since in the vast majority of cases, the capital of worker cooperatives is not traded and is often held in non-divisible capital reserves. Worker cooperatives tend to be labour-intensive enterprises in which human rather than physical capital is the most significant factor of production, and in which the capital structure of the organisation plays an important, albeit subordinate, role. Hence, the initial focus on dividend-based labor remuneration fits all worker cooperatives, while the tradability of shares does not.

On the other hand, however, companies that trade shares of their capital on private or public exchanges represent crucial players in contemporary market economies (Mikami, 2025), as they have direct, non-brokered access to financial markets for their operations and investments. This can contribute to their ability to reach optimal capitalization faster and compete in capital-intensive, high-value-added sectors.

The thought experiment in this paper starts with the analysis of the simplest forms of worker cooperatives, which are usually labor-intensive. Most of the value added is paid in terms of remuneration of labor, capitalization is relatively low, and capital has a subordinate role, which means that these cooperatives may be well positioned to operate in competitive markets, even in the absence of non-intermediated access to financial markets. We then go on to analyze the

possibility of introducing individualized equity stakes, which may or may not be saleable in the market. When capital is individualized and allocated to members, the first option is to implement a system of internal capital accounts in which members are paid shares of net year-end surpluses as patronage rebates, which are accumulated to finance investment programs and which are redeemable, repaid to members when they leave the organization, as is the case in the Mondragon group, and in the ESOP project being implemented in Slovenia by the Institute for Industrial Democracy in Ljubljana (Ellerman, Gonza, and Berkopec, 2022), under the label of European Employee Stock Ownership Plan (E-ESOP). Individual accounts are redeemable, and workers receive shares of realized profits, not of future profits, since no share market is implemented.

The second possibility is to set up a market for members' shares, which, however, is internal to the cooperative and takes place among members themselves, a market in which, normally but not necessarily, the outgoing members sell their shares to the incoming ones, as was the case in the US Plywood Cooperatives of the Pacific Northwest. This solution is also applied in some cases of employee-owned companies, especially in Anglo-Saxon countries such as England and the United States, following the John Lewis partnership experience. Employee Ownership Trusts (EOTs), but not tradable shares, are created to remunerate employee-members with year-end dividends on share ownership, while at the same time employee-members are not owners, and therefore cannot sell their equity stake as is the case in usufruct ownership rights (Furlan, 2025). An internal market for equity shares implemented among members can be interpreted as a method to improve the valuation of shares, since internal share prices are likely to be correlated with the economic performance of the organization and the true market value of shares. Even so, the absence of a genuine financial market in which shares are traded and in which there are independent intermediaries and traders is likely to distort the pricing of shares to some extent. For example, by making share price dependent on the level of wealth of the employee-shareholders and thus their ability to pay for the shares. This possibility is extensively discussed in the work of Dow (1986, 2003, 2003, 2018) and Mikami (2016, 2018, 2025).

Other possibilities, which at this stage remain largely theoretical, are represented by the sale of cooperative shares in private capital markets, where the shares would be traded by specialized intermediaries, such as private equity funds, rather than by the general public. These intermediaries or professional investors could assess the market value of the cooperative's shares based on standard accounting criteria, such as discounted cash flow capitalization, EBITDA

multiples and NAV (net asset value). This solution would allow cooperatives to sell part of their capital in the market, and shares could be sold both by the cooperative to intermediaries and among market participants themselves. Among the many important implications of this type of solution would be the possibility of worker-members selling their shares on the market at the time of their exit, which would relieve the cooperative of the obligation to repay them. As said, this legal obligation can, in some cases, be a serious burden, potentially weakening the financial strength and stability of the organization (Furlan, 2025). On the other hand, if the shares sold on the market are voting shares, this would, of course, dilute and weaken mutualistic control rights.

A final possibility, whose economic nature is the same as the previous one, would be the sale of cooperatives' shares on public stock exchanges (Tortia, 2025).This possibility would, of course, allow cooperatives to be financed also by the general public, not only by specialized intermediaries. If the general public shareholding is, as is often the case, fragmented and dispersed, this solution would not pose serious threats to the mutualistic control rights of members, even in the presence of voting shares. In fact, several ESOP (employee-owned) companies in which the majority of shares are held by employees in the U.S. are listed on public exchanges (Furlan, 2025).

Opening the sale of cooperatives' shares to an external capital market, whether private or public, would eliminate the obligation for cooperatives to reimburse members' shares, as the shares would be sold at the current market price. The cooperative's capital would no longer vary according to the number of incoming and outgoing members. The cooperative's capital would become fixed, as in investor-owned companies. A second advantage is that members would have a strong incentive to increase the productivity and performance of the cooperative before leaving the organization to cash in on a higher price for the shares they hold at the time of departure or retirement, even though, as a general rule, they would not be forced to sell. Members who decide or have to withdraw would simply change their status from shareholder-member to external investor, which entails the loss of membership rights but not the ownership of the shares (Furlan, 2025).

5. A new proposal for members’ shares in worker cooperatives

Starting from the basic distributive idea of dividend-based labor remuneration, it would be important to devise new patterns that could connect the distribution of income, which

fundamentally characterises workers' membership in cooperatives, and their tradable financial position, as is partially happens with ESOP schemes in the US and the EOT in the UK (Furlan, 2025). Furthermore, it would also be important to devise ways of aligning members' objectives with the possible financial investments of external subjects, both institutional and individual, in order to create a cooperative share market that supports the intervention of non-members. These objectives are difficult to achieve, as the flow of income earned by members is strictly linked to their personal characteristics, i.e. their work activity, personal identity, time horizon in the organization, and also to their rights of control over the organization, which as a rule are considered incompatible with risky financial investments by non-member investors. (Alchian and Demsetz, 1972; Jensen and Mackling, 1976, 1979). In other words, the goal of linking an individual job to an income stream based on dividends from the firm's residuals, not fixed wages, and which, at the same time, is also connected to a member's financial position in the cooperative's capital and open to possible investments from outside financial backers, seems to be prohibitive, but still worth pursuing. The possibility to sell shares to non-member investors would increase potential capitalization and would not dilute worker members' control rights if these shares are non-voting. The economic value of shares would be granted, in this case, not by control rights, but by interest alignment with member-owners, and also by the clear connection between dividends paid out to members (labour income) and the financial dividends paid out to investors.

The positive aspects of dividend-based remuneration, both microeconomic and macroeconomic, have been highlighted in the previous sections and are well-documented in the existing literature. This distribution model, regardless of its possible connection to the financial position of cooperative members, is consistent with the idea that worker cooperatives and cooperatives in general can be resilient organizations, able to adapt to difficult economic conditions better than conventional firms, also resisting the possibility of laying off workers in such conditions (Tortia and Troisi, 2021; Borzaga, Carini, and Tortia, 2022). At the microeconomic level, they help cooperatives withstand market competition in labor-intensive, and/or low-value-added sectors. However, they are not a solution to the problem of undercapitalization that plagues cooperatives in capital-intensive, high value-added sectors (Major, 1996). As discussed in previous sections, adaptability and resilience have positive implications at the macroeconomic level too (Weitzman, 1986; Meade, 1989).

Accordingly, this section focuses on the connection between dividend-based remuneration and the financial position of members in worker cooperatives, which could help cooperatives achieve

optimal capitalization. When moving beyond fixed wage payments to dividend-based remuneration, the remuneration of labour can be interpreted as the return on investments in both human and physical capital taken together, as argued by Dow (2003) and Mikami (2016). All returns on invested capital take the form and translate into residual labor remuneration, as presented in the WDVM model, while financial capital, in the basic scheme, is paid only the market interest rate.

In most cases, dividends as a percentage of return on risky capital investments can be expected to be higher than interest rates in the same sector, and to be positively correlated with the degree of riskiness of the investments made and the company competitive position, or moat, in the market. Measuring the average dividends distributed or reinvested in a given sector can give a rough idea of the quantitative link between dividends distributed in terms of labor remuneration and the financial value of invested capital. This calculation must take into account the proviso that, if all worker-members of a cooperative are paid dividends and not wages, the labour cost is effectively zero and the members appropriate all the whole added value of the organisation, net only of the cost of borrowed capital. Calculating the putative (nonmarket) value of the organization's shares, even using other standard methodologies (discounted cash flows, EBITDA multiples, and NAV), can give a reasonably good idea of the organization's market value and members' financial position. An internal market for membership shares can be implemented, where members can trade shares with each other, particularly between outgoing and incoming members.

The second key step in the argument in this paper is that, in order to increase capitalization, members may also decide to sell the cooperative's shares to outside investors in private equity markets. In this case, it is necessary to find a clear link between the value of the shares held by members and the value of the shares sold to investors. The simplest and most transparent (unambiguous) way to determine this link is for the shares held by cooperative members and outside investors to be equal, that is, characterized by the same share price and the same value of dividends distributed, and labelled cooperative common stock (Tortia, 2025). The need to best align the interests of members and investors plays a crucial role in this scheme, since in the absence of such alignment, investors are unlikely to be able to reasonably calculate the value of their financial position in the organization and the expected return (dividend) from their investment (Jensen and Meckling, 1976, 1979). In the absence of investor control, which characterizes investor-owned companies, the lack of a clear link between the value of the initial

investment, market value, and return is likely to cause cooperative shares to be selected against and excluded from stock markets. If a clear linkage were established instead, investors would be able to calculate expected returns and meaningfully compare investments in cooperative shares with those in other similar financial assets and securities.

When there is a public market for such cooperative shares, the whole process of calculating financial values can be simplified, as the relevant price becomes the public price, set by the market. In this case, better organizational performance would lead to higher share prices and dividends distributed to members in absolute terms. However, if share prices rise sharply, dividends in percentage points fall and it is therefore easier for the cooperative to obtain financing in the market, as it has to pay lower dividends in percentage points. The opposite results would be obtained, of course, when performance is poor. The cooperative may be forced to reduce the dividends distributed to members to also reduce the dividends paid to outside investors. When performance is very poor, reducing the monetary value of dividends may not be enough to reduce dividends in percentage points. Higher percent dividends would signal the difficulties and greater riskiness of the financial investments made in this organization. Outside investors would require higher dividend percentages to continue investing.

5.1. Rules of cooperative share operation

The rules of cooperative share operation are of fundamental importance to the proper functioning of the system. This subsection discusses allocation and exchange rules for incoming and outgoing members, rules for distributing shares to incumbent members, voting and control rights, cooperative governance, and their relationship to financial values and incentives for cooperative shares (Hansmann, 1988, 1996).

Allocation rules: incoming members would be allocated the number of shares in the cooperative capital at market value (when it exists, otherwise based on accounting criteria) at the time of joining the organization, based on the dividend distributed by the cooperative as labor income. The number of shares allocated would simply be the value of an incoming member's financial position, calculated based on the dividend distributed in terms of labor income, divided by the (market or non-market) price of one share. The shares allocated to the incoming members may already exist, e.g., sold by outgoing members, or retained by the organization in its capital statement as treasury (not outstanding) shares. In this case, there is no dilution of the value of the shares, as no new shares are issued. The cooperative can also issue new shares when the number

of shares attributable to new members is insufficient, such as when the organization is expanding fast its business and no members are leaving (plus, there are no treasury shares). Issuing new shares may cause dilution in the value of outstanding shares, but not necessarily if the organization is growing rapidly.

Incoming members can pay the full (market or non-market) price of the shares that are allocated to them, or they can purchase the shares at a discount. Existing or newly issued shares can also be awarded free of charge when, for example, capitalization and share price are high and financial constraints make it difficult for an incoming member to make a large upfront payment. In this case, however, it is necessary to prevent the risk of the incoming member exiting early and selling their shares in the market to cash in their value. To avoid this risk, the allocation of shares to new members can be scheduled, taking into account the age and seniority of the member, so as not to allow unwarranted or early sales resulting from opportunistic choices. The planned allocation would ideally be calibrated by considering the average duration of employment from initial association with the cooperative until retirement.

Distribution: shares may also be distributed to existing members as a kind of financial incentive or when the member receives income increases, which corresponds to the allocation of an additional number of shares valued at the price at the time of distribution. The distribution of shares is a financial incentive, while the increase in earned income is an economic incentive. In the present proposal, both incentive types (economic and financial) are equivalent, since labor income is necessarily tied to the number of shares held by the member and vice versa. However, distribution results from managerial decisions regarding the increase in labor income, career progress, or the attribution of financial incentives. In this sense, distribution is discretionary and, for this reason, must be informed by criteria of equity and financial sustainability, which will need to be better understood in future research work. Presumably, since managerial decisions in cooperatives depend on mutualistic principles, decision rights and governance (fundamentally, the "one member, one vote" rule), allocation would take place according to criteria of fair mutual benefit and equity, involving the entire membership.

Voting rights: While in investor-owned organizations the dominant type of shares are common stock, which carries voting rights, non-voting preferred shares are a rarer and more limited phenomenon, which we will not go into in this article. On the other hand, as for the proposed cooperative shares, this type of stock would represent a type of common stock, but it should be non-voting for two main reasons. The first reason is that if cooperative shares were voting shares,

they could not be sold to outside investors, since the ownership of a substantial amount of these shares by investors would dilute the control rights of members. The second reason is that since the shares cannot be distributed equally among the members themselves, giving equal voting rights to each share, as is the case in investor-owned companies under the “one share, one vote” rule, would violate the mutualistic “one member, one vote” rule, which instead gives equal decision-making power to each member as a subjective membership right (Ellerman, 2005, 2016, 2021).

Of course, non-voting shares can be discarded by outside investors because they carry no voting rights. However, in the scheme developed in this paper, the rationale for the sale of shares to external investors by worker cooperatives is not the sharing of decision-making power, but is purely financial and aimed at improving capitalization by allowing financial flows to come directly from individual and institutional investors in the financial markets through the issuance of shares (and possibly also bonds, which are not discussed here). To achieve this goal, investors are given dividends of the net surpluses produced by the organization (in addition, of course, to possible increases in the market price of shares) in a simple and transparent way.[2] In other words, the operation of cooperative shares sold to outside investors is based solely on financial incentives and not on control rights. As mentioned, the alignment of interests between members' and investors' goals plays a crucial role. In the absence of such alignment, non-voting investors are expected not to invest equity in a cooperative (Jensen and Meckling, 1976, 1979).

6. Conclusion

This paper has dealt with the economics and finance of dividend-based labor compensation in worker cooperatives, discussing the economic implications of this compensation solution at both the microeconomic and macroeconomic levels, and then also discussed the possible link between dividend-based remuneration and the value of the financial position of cooperative members, intending to create innovative types of cooperative shares. These shares would function as

[2] Multi-stakeholder forms of governance can be implemented in which outside investors own only non-voting shares, but, at the same time, can elect representative and/or advisory bodies that can interact with and advise the board of directors and top management of the cooperative.

individualized ownership rights in the cooperative's capital and may be subject to different forms of regulation and implementation.

The first regulatory possibility is that cooperative shares are not traded in any market, but accumulated in internal capital accounts and then redeemed to members upon exit, retirement, or according to a predetermined schedule of redemptions (or rollover mechanism), as is the case in the Mondragon group of cooperatives in the Basque region of Spain and in the ESOP project of the Institute for Economic Democracy in Ljubljana, Slovenia. The second possibility is for cooperative shares to be exchanged, but only internally among cooperative members, particularly between incoming and outgoing members, as was the case in the Pacific Northwest plywood cooperatives of the United States in the 20th century, as analyzed by Dow (2003) and Mikami (2025).

The last possibility, discussed and developed in this paper, concerns opening the sale of cooperative shares to outside (non-member) financial investors. In this case, a real market for non-member cooperative shares would be implemented. To do this, it is envisaged that a clear link between dividend-based labor remuneration and the value of members' financial participation in the cooperative’s capital should be established, that members' financial goals and incentives should be aligned with the interests and incentives of external investors through the introduction of shares that have the same fundamental characteristics for both members and investors, and, finally, that investors' financial participation, and thus ownership of the cooperative's capital, be decoupled from control rights. Specifically, all shares in the cooperative, held by both members and investors, must be non-voting, as voting common shares in cooperatives would alter the mutualistic principle that assigns equal subjective and decision-making rights to all members, and only members.

If publicly traded financial securities are created, the relevant share price will be set by market exchanges. On the other hand, when a public market is not realized, the cooperative's shares will be valued based on standard accounting criteria and traded in private equity markets by specialized intermediaries such as private equity funds.

REFERENCES

Albanese, Marina, 2003. Le difficoltà di finanziamento delle labour managed firms e il razionamento del credito. *Economia politica,* 20(3), 303-334.

Albanese, Marina, Navarra, Cecilia, & Tortia, Ermanno C. (2015). Employer moral hazard and wage rigidity. The case of worker-owned and investor-owned firms. *International Review of Law and Economics* 43(3): 227–237.

Alchian, A. A., & Demsetz, H. (1972). Production, information costs, and economic organization. The *American Economic Review,* 62, 777–795.

Berman, Katrina V, and Berman, Matthew D (1978). The Long-Run Analysis of the Labor-Managed Firm: Comment. *The American Economic Review*, 68(4), 701-705.

Berman, Katrina V, and Berman, Matthew D (1989). An empirical test of the theory of the labor-managed firm. *Journal of Comparative Economics*, 13(2), 281-300.

Bonin, John, Derek C. Jones, and Louis Putterman. 1993. Theoretical and empirical Studies of Producer Cooperatives: Will the Twain Ever Meet? *Journal of Economic Literature* 31: 1290–320.

Borzaga, Carlo, Chiara Carini, and Ermanno C. Tortia. 2022. Co-operative enterprise anti-cyclicality and the economic crisis: A comparative analysis of employment dynamics in Italy. *Annals of Public Cooperative Economics* 93: 551–77.

Burdín, Gabriel, and Andrés Dean. 2009. New evidence on wages and employment in worker cooperatives compared with capitalist firms. *Journal of Comparative Economics* 37: 517–33.

Craig, Ben, and John Pencavel. 1992. The Behaviour of Worker Cooperatives: The Plywood Companies of Pacific Northwest. *The American Economic Review* 82: 1083–1105.

Craig, Ben, and John Pencavel. 1994. The Empirical Performance of Orthodox Models of the Firm: Conventional Firms and Worker Cooperatives*. Journal of Political Economy* 102: 718–744.

Domar, Evsey D. (1966). The Soviet Collective Farm as a Producer Cooperative. *The American Economic Review*, 56(4), 734-757.

Dow, Gregory K. 1986. Control Rights, Competitive Markets, and the Labor Management Debate. *Journal of Comparative Economics* 10: 48–61.

Dow, Gregory K. 2003. *Governing the Firm. Workers' Control in Theory and Practice.* Cambridge, MA: Cambridge UP.

Dow, Gregory K. (2018). *The Labor-Managed Firm. Theoretical Foundations.* Cambridge University Press.

Ellerman, David P. 1984. Theory of Legal Structure: Worker Cooperatives. *Journal of Economic Issues* 18: 861–91.

Ellerman, David P. 1986. Horizon Problems and Property Rights in Labor-Managed Firms. *Journal of Comparative Economics* 10: 62–78.

Ellerman, David P. 2016. Worker cooperatives as based on first principles. JEOD, *Journal of Entrepreneurial and Organizational Diversity* 5: 20–32.

Ellerman, David P. 2021. *Neo-Abolitionism. Abolishing Human Rentals in Favor of Workplace Democracy.* Heidelberg: Springer.

Ellerman, David P., Tej Gonza, and Gregor Berkopec. 2022. European Employee Stock Ownership Plan (ESOP): The Main Structural Features and Pilot Implementation in Slovenia. *SN Business Economics* 2: 186.

Furlan, Beatrice (2025). PRINCIPALI MODELLI DI PARTECIPAZIONE DEI LAVORATORI ALLA ROPRIETÀ D'IMPRESA E IL CASO SPERIMENTALE DELL'ESOP COOPERATIVO EUROPEO. University of Trento, Italy. Master dissertation.

Furubotn, Eirik G., and Svetozar Pejovich (1970). Property Rights and the Behavior of the Firm in Socialist State: The Example of Yugoslavia. *Zeitschrift für Nationalökonomie* 30: 431–54.

Hansmann, H. B. (1996). *The ownership of the enterprise.* Belknap Press of Harvard University Press.

Hansmann, H. B. (1980). The role of nonprofit enterprise. *The Yale Law Journal*, 89, 835–901.

Jensen, Michael C., and William H. Meckling. 1976. Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. *Journal of Financial Economics,* 3: 305–60.

Jensen, Michael C., andWilliam H. Meckling. 1979. Rights and Production Functions: An Application to Labor-Managed Firms and Codetermination. *The Journal of Business* 52: 469–506.

Locke, John. 1690. *Second Treatise on Government.* Indianapolis: Hackett.

Major, Guy. 1996. Solving The Underinvestment And Degeneration Problems Of Workers' Cooperatives. *Annals of Public and Cooperative Economics,* 67(4), 545-601.

Meade, James E. 1972. The Theory of Labour-Managed Firms and of Profit Sharing. *Economic Journal* 82: 402–28.

Meade, J.E. (1979). Stagflation in the United Kingdom. *Atlantic Economic Journal* 7, ii–10.

Meade, James E. 1986. *Alternative Systems of Business Organisation and Workers' Remuneration.* London: Allen and Unwin.

Meade, James E. 1989. *Agathotopia: The Economics of Partnership.* Aberdeen: Aberdeen UP.

Mikami, Kazuhiko (2016). Cooperatives, Transferable Shares, And A Unified Business Law. *Annals of Public and Cooperative Economics* 87: 365–90.

Mikami, Kazuhiko (2018). Are cooperative firms a less competitive form of business? Production efficiency and financial viability of cooperative firms with tradable membership shares. *Economic Systems,* 42(3), 487-502.

Mikani, K. (2025). *Cooperatives and the market economy.* Heidelberg, DE: Springer Verlag.

Miyazaki, Hajime, and Hugh M. Neary. 1983. The Illyrian Firm Revisited. *Bell Journal of Economics* 14: 259–70.

Navarra, Cecilia. 2011. Profit reinvestment in Italian worker co-operatives as a contribution to a common good: An empirical analysis on workers' perception and motivation. *Advances in the Economic Analysis of Participatory and Labor-Managed Firms* 12: 199–229.

Navarra, C. 2016. Employment stabilization inside firms: An empirical investigation on worker cooperatives. *Annals of Public and Cooperative Economics* 87: 563–85.

Navarra, Cecilia, and Ermanno C. Tortia. 2014. Employer Moral Hazard, Wage Rigidity, and Worker Cooperatives: A Theoretical Appraisal. *Journal of Economic Issues* 48: 707–26.

Origo, Federica (2003). The effects of wage flexibility and the role of institutions: incentive, sorting and rent sharing. Catholic Università of Milan, Institute for Social Research. Online: https://www.researchgate.net/publication/228819037_The_effects_of_wage_flexibility_and_the_role_of_institutions_incentive_sorting_and_rent_sharing

Origo, Federica (2009). Flexible pay, firm performance and the role of unions. New evidence from Italy. *Labour Economics* 16, 64–78.

Pencavel, John, Luigi Pistaferri, and Fabiano Schivardi. 2006. Wages, Employment, and Capital in Capitalist and Worker-Owned Firms. *ILR Review* 60: 23–44.

Pérotin, Virginie. 2013. Worker Cooperatives: Good, Sustainable Jobs in the Community. JEOD, *Journal of Entrepreneurial and Organizational Diversity* 2: 34–47.

Tortia, Ermanno C. 2018. The Firm as a Common. Non-Divided Ownership, Patrimonial Stability and Longevity of Co-Operative Enterprises. Sustainability 10: 1023.

Tortia, Ermanno C. 2021. Capital as Common-Pool Resource: Horizon Problem, Financial Sustainability and Reserves in Worker Cooperatives. *Journal of Co-operative Organization and Management* 9: 100137.

Tortia, Ermanno C. 2022. Employment Protection Regimes and Dismissal of Members in Worker Cooperatives. *Scandinavian Journal of Management* 38: 101213.

Tortia, Ermanno C. 2025. Dividend-Based Labor Remuneration and Tradable Shares in Worker Cooperatives. *Risks*, 13, 15.

Tortia, E. C., & Troisi, R. (2021). The resilience and adaptative strategies of Italian cooperatives during the COVID-19 Pandemic. Foresight and STI. Governance, 15, 78–88.

Vanek, Jaroslav. 1970. *The General Theory of Labour Managed Market Economies*. Ithaca: Cornell UP.

Vanek, Jaroslav. 1977. *The Labor-managed Economy: Essays by Jaroslav Vanek*. Ithaca: Cornell UP.

Ward, Benjamin. 1958. The Firm in Illyria: Market Syndicalism. *The American Economic Review* 48: 566–89.

Weitzman, Martin L. 1986. *The Share Economy. Conquering Stagflation.* Cambridge: Cambridge University Press.