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The Power of Co-operatives: Converting Monopolists into Self-regulating and Efficient Organisations

Morris Altman

The conditions under which co-operative monopolies can be self-regulating in the sense of behaving similarly (at a minimum) to an efficiently regulated monopoly are modelled in this paper. I argue that an employee-owned or workers' co-operative monopoly can be expected to operate similarly to an investor-owned monopoly generating relative high prices and lower levels of output and producing deadweight losses. But such a co-operative would be relatively more x-efficient because of its incentive environment. I argue, however, that a multi-stakeholder co-operative, incorporating the preferences of consumers and other stakeholders, can be expected to behave similarly (at a minimum) to an efficiently regulated monopoly, whilst generating a higher level of x-efficiency than the investor-owned monopoly and a more equitable distribution of income. Critical to this argument is the quality of governance of the co-operative and the inability of the executive of the co-operative to capture the decision-making goals and objectives from the collective. Such 'co-operative capture' would lead to a failure in co-operative governance resulting in co-operative outcomes converging to those of unregulated investor-owned firms.

Introduction

The co-operative is rarely discussed in the basic economics literature (Hill, 2000). A key point of this paper is to identify those conditions, if any, wherein an employee-owned or workers' co-operative which is a monopoly, is self-regulating as compared to an investor-owned monopoly which, by assumption, is not self-regulating (for an elaborate discussion of the co-operative organisational form see, for example, Altman, 2009b; Dow, 2003; Fairbairn, 2003; Hansmann, 1966; Rothschild & Allen-Whitt, 1986; Sykuta & Cook, 2001). The same point is addressed with regards to a multi-stakeholder or solidarity co-operative, wherein stakeholders in the production entity include employees, consumers, and possibly representation from local government and community organisations. By self-regulating I refer, at a minimum, to a firm regulating itself in a manner such that its price and output would be similar to what would transpire in a competitive environment. Hence, self-regulation would eliminate traditional inefficiencies (deadweight losses). Going one step beyond this, self-regulating could also refer to policies that would generate relatively lower than competitive profits to meet the expressed interests of members of the co-operative, which could include minimising negative externalities generated in the production process. In contrast, investor-owned monopolies are assumed to behave as profit maximisers wherein they attempt to charge the highest price possible, thereby reducing consumer surplus; and this price exceeds the competitive price. Quality might also be reduced by investor-owned monopolies in efforts to maximise monopoly profits. In conventional analysis, quality is typically held constant. But quality reduction is consistent with exploiting monopoly power to generate greater benefits to investors.

I argue that employee-owned or workers' co-operative monopolies cannot be expected to be self-regulating even if they adhere to co-operative principles (see Appendix A on co-operative principles). With an employee-owned co-operative monopoly, monopoly profits are distributed in a manner consistent with the interests of co-operative members, but deadweight losses still persist. However, there is more equity with regards to the distribution of the surplus. I argue that self-regulation is possible through a multi-stakeholder co-operative (MSHC[1]) or solidarity co-operative. Self-regulation here becomes a possibility when such a co-operative adheres to co-operative principles (see Appendix A). This avoids the costs involved in having to appoint regulators and enforce regulations. Self-regulating co-operative monopolies are also an alternative to state ownership as a method of regulating a monopoly; in this instance

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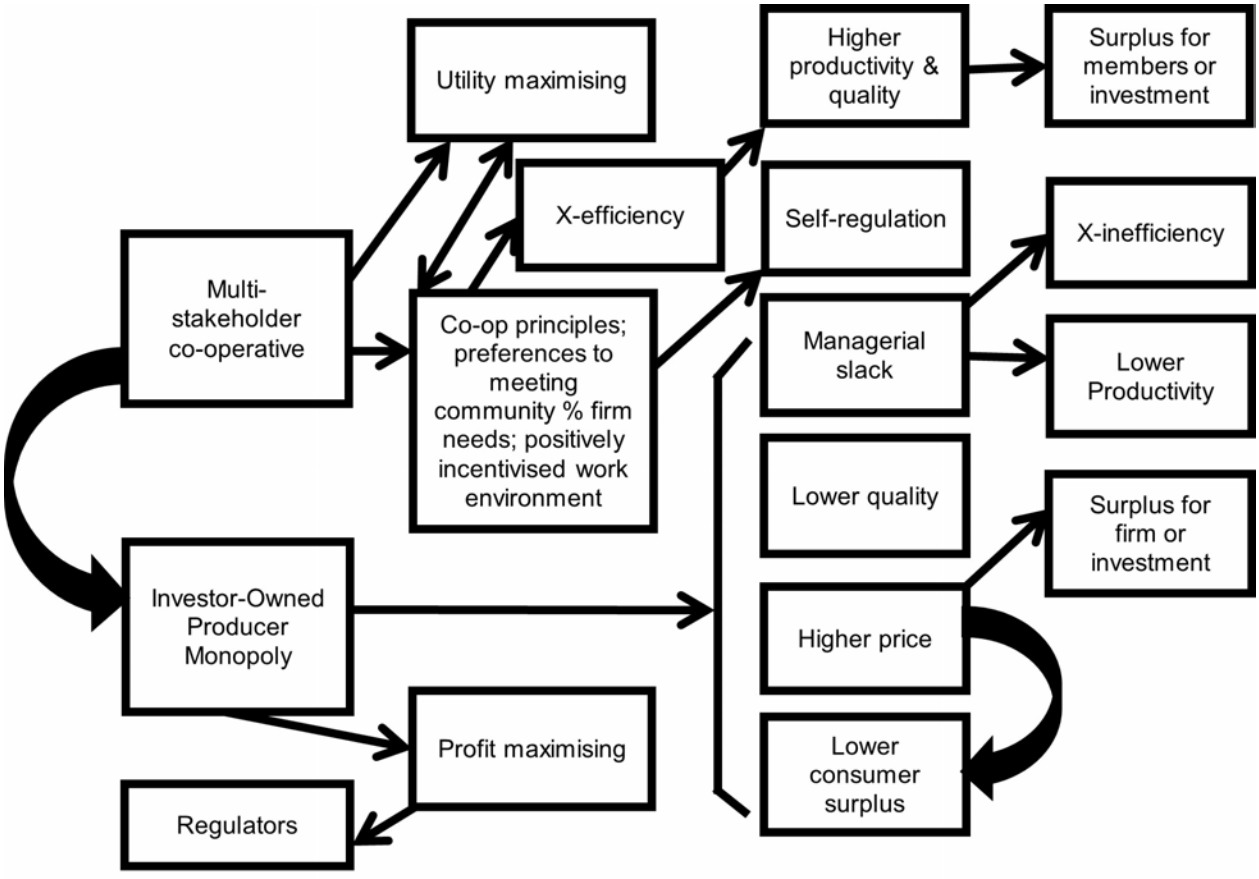
to meet the specified needs of the state. Moreover, solidarity co-operatives would produce output more consistent with the preferences of the owners who include both consumers and employees. I also argue that co-operative firms, be they employee-owned co-operative monopolies or multi-stakeholder co-operative monopolies (if this includes employees) can be expected to produce more efficiently (more x-efficiently) than the investor-owned monopoly. X-efficiency refers to firms being as productive as possible given traditional inputs, such as labour and capital (Leibenstein 1966; Altman, 1990). To be as x-efficient as possible requires all firms' members working as hard and smart as they can, which typically is not the case. This differential efficiency effect is expected to occur because of the different incentive environments in co-operatives and the investor-owned firms.

Co-operatives as self-regulating organisational forms are posited as a more efficient means of regulating monopolies when monopolies are considered to be an acceptable organisation for efficiency or location reasons. The same argument could be applied, more generally, to co-operatives in *monopolistic* markets. In this case, market power is diminished, but still exists. The multi-stakeholder co-operative (MSHC — more than one stakeholder) or solidarity co-operative is a co-operative that is jointly owned by employees and consumers and could also include an ownership stake by the community within which the co-operative is located.

To what extent can one expect co-operatives to exploit market power to increase price and or reduce quality, which is what one would expect from investor-owned profit maximising firms? In Figure 1, I outline my analytical framework, focusing on the investor-owned monopoly, the employee-owned co-operative monopoly, and the multi-stakeholder co-operative monopoly, where the benchmark for monopoly behaviour is the conventional investor-owned monopoly firm.

Figure 1. Analytical framework



I model a reasonable scenario wherein co-operatives can be expected to behave in a self-regulating fashion. Alternatively, I model a reasonable scenario wherein co-operatives can be expected to behave in a similar fashion to investor-owned firms with regards to exploiting market power. This has important implications for policy is so far that *certain types* of co-operatives can efficiently

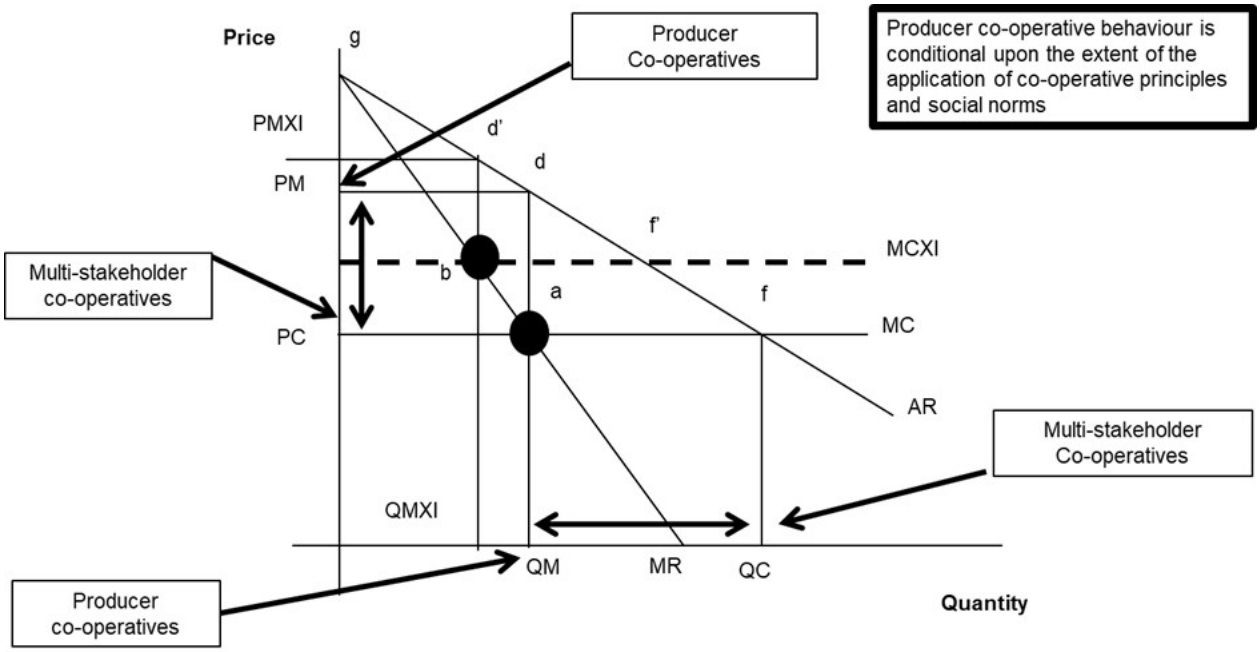
and effectively self-regulate and can do so in a more equitable fashion as compared to the state regulating investor-owned firms or nationalising these firms as a means of regulating them.

A Co-operative as a Monopoly

One would expect (predict) that an employee-owned co-operative would behave like an investor-owned monopolist when the co-operative is not closely connected with its customer base. This behaviour would be facilitated when consumers are willing to pay higher prices or accept lower quality for co-operative products (Altman, 2016). One would expect that a monopolist (even an employee-owned co-operative) would behave as a profit maximiser, resulting in higher prices and less output. This is a function of the behavioural assumptions underlying the decision-makers of such firms. One assumes profit maximisation at the margin, holding quality constant, wherein profit maximisation maximises the utility of such decision-makers. This assumes that members of the employee-owned co-operative are not dominated by altruistic and empathetic preferences (moral sentiments, warm glow) (Altman 2012, 2016; Andreoni 1990; Fehr & Fischbacher 2002); they are self-interested individuals. But their self-interest relates to that of members of the employee-owned co-operative as opposed to investor owners. This has implications for understanding issues related to productivity and the distribution of income inside of the firm.

Monopolistic behaviour is illustrated in Figure 2. MC is considered to be the traditional marginal cost curve and MR is the marginal cost curve for a monopoly. The profit maximising monopoly produces at QM at price PM. A competitive firm produces at QC at price PC. Using the conventional economic approach to the firm, one would expect that an employee-owned co-operative monopoly would produce at QM at price PM, the same as the investor-owned firm. This yields the 'deadweight' or welfare loss (daf), but one also has the loss in consumer surplus (adgPC) above and beyond the deadweight loss due to the higher price and the lesser amount of output produced. From a societal or community perspective, the outcomes predicted here are the *same* for the employee-owned co-operative and the investor-owned firm.

Figure 2: MSHC and pricing



In the employee-owned co-operative monopoly, co-operative members would be advantaged by the increased profits (monopoly profits) that would be distributed to employees (and of course the management of this co-operative) which would have been otherwise distributed to the investors in the traditional investor-owned monopoly. However, one would expect, ceteris

paribus, that this type of co-operative would have fewer owner-employers, as it would be producing less output, than would a competitive employee-owned co-operative. An employee-owned co-operative monopoly should also be more productive than their investor-owned equivalent in so far that there are incentives for the firm to be more x-efficient given that in the co-operative, workers share in benefits (increased productivity) from working smarter and harder (Altman, 2002, 2005, 2006, 2015; Ben-Nur & Jones, 1995; Bonin et al., 1993; Davis, 2004; Doucouliagos, 1995; Gordon, 1998; Pérotin & Robinson, 2004; Sexton & Iskow, 1993).

In the conventional model of the firm, firms are assumed to be x-efficient. For x-efficiency to exist, firms are assumed to be as productive as possible given traditional inputs into the production process. A critical underlying assumption here is that workers and management and, more generally, members of the firm hierarchy are working as smart and as hard as they can. In other words, effort per unit of labour input is assumed to maximised. At a minimum, it is assumed that effort is fixed at some 'optimal' level. But, more realistically, effort input is related to the preferences of workers and members of the firm hierarchy and the incentive environment of the firm. Hence, in this case, effort would be a discretionary variable. Leibenstein (1966), who first developed the concept of x-efficiency, argued that typically managers are not interested in maximising their effort inputs in the process of production. They are more interested in leisure and non-market activities, for example, which results in x-inefficiency and, therefore, in lower productivity and higher average costs. This point is illustrated in the equation below, where in a simple model, AC is average cost, W is the wage rate (a proxy for the work environment) and Q/L is output divided by labour input or labour productivity (based on Altman, 1992, 2002, 2005, 2009a):

$$AC = \frac{W}{\left(\frac{Q}{L}\right)}$$

Reducing effort input, reduces productivity, increasing average cost. Extending this x-efficiency narrative to a monopoly, the bottom line is that the existence of effort discretion and particular preferences of managers causes the monopoly to not only generate traditional losses to society (deadweight loses) but also productivity losses in terms of x-inefficiency. Being in a monopoly position or even in a monopolistic position in the market protects the x-inefficient firms from competitive pressures. Protection is also afforded to such x-inefficient firms by tariffs or government subsidies.

But x-inefficiency is not the inevitable by-product of a firm being a monopoly or being protected from competitive market forces. If the monopoly is an employee-owned or worker co-operative the incentive environment in the firm would be different from what exists in the investor-owned firm where employees typically have no direct ownership stake in the firm. In an extended version of x-efficiency theory (Altman, 1992, 2002, 2005, 2009a) it is not management alone (or the firm hierarchy) that drives the firm's level of x-efficiency. Of critical importance is the incentive environment of the firm that impacts on the performance of all firm members, inclusive of workers/employees who comprise the majority of firm members. If employees are incentivised by higher wages and improved working conditions, have an ownership stake in the firm, and have voice in the operation of the firm, this can result in increased effort inputs and higher productivity and vice versa. If productivity increases sufficiently to offset the increased costs of the improved incentive environment, then average costs need not increase. As per the equation, if W increases by 10 per cent and productivity increases by 10 per cent average costs will not increase. And, average costs will not fall if a drop in W results in a commensurate drop in productivity.

Management, would not necessarily have an incentive to improve working conditions of their employees and, relatedly, increase the level of x-efficiency if this does not result in any material benefit to themselves and if they do not have much empathy for their employees — their utility

is not much affected by improving the work environment of their employees. But in a workers' co-operative the preferences of employees are more aligned with the preferences of managers since managers are supposed represent the interests of employees who are also the owners of the firm. In this organisational structure, employees have the incentive to work harder and smarter, to increase their effort inputs in the process of production. This would increase this co-operative monopoly's level of x-efficiency (Altman, 1990, 2002, 2005, 2006, 2015; Ben-Ner & Jones, 1995; Davis, 2004; Doucouliagos, 1995; Lampel et al., 2010; Pérotin & Robinson, 2004; Sexton & Iskow, 1993). In this case, the monopoly would not experience the losses in x-efficiency predicted by Leibenstein (1966). Therefore, the employee-owned co-operative monopoly is more x-efficient than an investor-owned monopoly, but there remains the traditional inefficiencies (deadweight loses) generated by monopolist organisational forms.

This point is illustrated in Figure 2, above. If one assumes that the investor-owned firm is x-inefficient, then its MC curve could be represented by MCXI not by MC. Being x-inefficient shifts the MC curve upwards. In this case, the firm would be producing at QMXI at price PMXI. MC would represent the marginal cost of the x-efficient co-operative monopoly. Comparing both types of monopoly firms, the co-operative monopoly produces a higher level of output (QM versus QMXI) and produces this output at a lower price (PM compared to PMXI). There are also gains in productivity given by the difference in the marginal cost curves. The employee-owned co-operative yields a larger economic pie, with co-operative members capturing these gains in x-efficiency. This model also suggests a higher level of consumer surplus with the co-operative than with the investor-owned monopoly, gPMd compared to gPMXId.

Co-operative principles and social norms can constrain expected monopolistic behaviour and outcomes. But there is no clear evidence that this is generally the case. If this was the case, producers would be willing to sacrifice income or other self-interested targets. The analytical prediction in my modelling framework is that simply because a monopoly is a co-operative does not automatically translate into such a monopoly behaving differently from the traditional investor-owned monopoly apart from the level of x-efficiency achieved. The latter is an important point, in so far as the benefits accruing from increased levels of x-efficiency are dispersed to the co-operative's owners as income or as an investible surplus which they control. In other words, co-operative members benefit from owning a monopoly. And, there are also important differential outcomes with regards to output and price levels.

Multi-stakeholder Co-operatives and Monopoly

An alternative to an employee-owned co-operative monopoly is a multi-stakeholder co-operative (MSHC) or a solidarity co-operative. In a MSHC, one possible ownership mix is consumers and workers. In another form, one can have a MSHC where the ownership mix also incorporates representatives of community organisations or government (for an elaborate discussion of MSHCs see Acheson, 2017; Ajates Gonzalez, 2017; Birchall & Sacchetti, 2017; Leviten-Reid & Fairbairn, 2011). In these alternative ownership structures, the predicted economic results would be **quite different** from what one would expect from a profit maximising employee-owned co-operative. The main reason for this is that in an MSHC the interests of consumers and other stakeholders are taken into consideration, are incorporated in the firm's decision-making process. They are incorporated into the objective function or preference function of the decision-makers, which is no longer focused on profit maximisation or on the maximisation of benefits to members of the workers' co-operative alone (Fairbairn, 2003; Galera, 2017; Zeuli & Radel, 2005).

I argue that when a monopoly is multi-stakeholder owned, the co-operative is intimately connected with its consumer and community base. Therefore, pricing and quality policy directly impact on the wellbeing or utility of consumers, workers, and other stakeholders. In such a governance structure one would expect that the exploitation of market power predicted for the pure workers' co-operative monopoly (and for the investor-owned monopoly) should not take

place. This prediction is related to how one models the preferences/objectives underlying the MSHC's decision-makers.

A fundamentally important point being made here is that even if one assumes that individuals tend to be self-interested, which is a core assumption of conventional economics, very localised self-interested behaviour is mitigated in an MSHC. Self-interest shifts from the employee-owned co-operative to that of the much more broadly-based multi-stakeholder co-operative. It is important to note that multi-stakeholder co-operatives, holding monopoly positions, play an important role in different sectors of the economy. One important example of this are the co-operative rural power providers that supply most electricity needs in rural United States. These co-operatives continue to experience above market growth as both producers and deliverers of electricity (NRECA 2020).

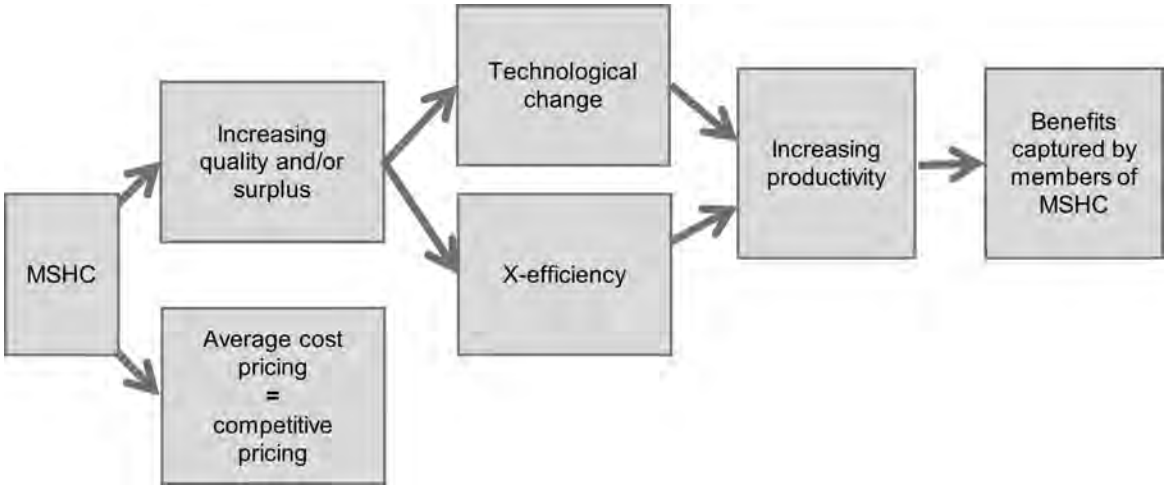
When the monopoly is a multi-stakeholder co-operative, where the purchasers of the monopoly's output are members of the co-operative and, therefore, have a voice in its decision-making, this co-operative can be expected to be self-regulating. Why? The interests of the consumers and owners of the monopoly would be one and the same and owner-consumer related principle-agent problems should be resolved. With MSHC ownership one cannot model the co-operative simply as a profit maximiser (or surplus maximiser). As with the behavioural model of the firm (Cyert & March, 1963), the MSHC's objective function is multi-faceted. It should include a variety of targets, one of which could be profits or surplus (income above costs). One possible objective could be to provide output at the lowest average cost possible, at a preferred level of quality. In this case, co-operative members choose what is the preferred level of quality. The latter affects the average costs of the co-operative.

Given these assumptions, one would expect the MSHC to behave similarly (at a minimum) to a competitive firm or a regulated natural monopoly in terms of price-setting behaviour. Therefore, price would be lower than with a workers' co-operative monopoly. In the case of an MSHC, it is assumed that higher prices (monopoly prices) reduce the utility or wellbeing of the owners of this more broadly based, inclusive co-operative. In terms of the conventional economic benchmarks, the MSHC co-operative generates economically efficient outcomes in terms of not generating deadweight losses or charging non-competitive prices. Moreover, quality control is transparently a function of the preferences of co-operative members and the members' chosen decision-makers (firm managers). In effect, the MHSC can be modelled as self-regulating monopoly. This would save society on regulatory costs. It also provides quality control by the consumers of the services provided by the monopoly. With an MSHC one would expect that the level of x-efficiency would be similar to what one would find with an employee-owned or workers' co-operative monopoly. The x-efficiency effect should be similar for both types of organisational forms because the incentive environment should be similarly favourably to workers. Hence, productivity should be greater than in the investor-owned monopoly.

These points are again illustrated in Figure 2. A self-regulated co-operative can be expected to produce at QC at price PC. And it could be operating at the x-efficient marginal cost curve MC, depending on how much of a surplus above average cost is desired (where marginal cost equals average cost in this simple model). But any price above the competitive price is the one chosen by co-operative members in a manner which is regarded as maximising their wellbeing or utility.

In Figure 3, I map out some of the key characteristics of the MSHC. Depending on the preferences of the co-operative members, this type of co-operative can charge competitive prices. Higher prices are possible, but these would be a choice of the co-operative's members wanting to generate more surplus for investment purposes, for example. There is also an incentive to improve quality and surplus to meet members' preferences without increasing price to members which would otherwise reduce the wellbeing or utility of its members. This would further incentivise technological change and increases to the level of x-efficiency (Altman 2009a). These yield increased productivity, thereby generating benefits captured by co-operative members.

Figure 3. MSHC and monopoly



A key difference between the multi-stakeholder co-operative and the purer employee-owned or workers' co-operative is that the MSHC would charge competitive prices if these meet the preferences of the co-operative's members. Both types of co-operatives are incentivised to produce x-efficiently. However, the workers' co-operative monopoly can get away with charging higher prices and produce at a lower level of quality to meet some its objectives as most of this burden would fall on non-members. This reduces the incentive to produce x-efficiently and engage in technological change since a greater surplus can be realised more easily by increasing price.

The analytical arguments made with regards to the MSHC co-operative critically depend on the quality of governance of the co-operative. Critical to this, is the extent to which firm governance abides by the co-operative principles (articulated by the International Co-operative Alliance (ICA, 2018a; see also Appendix A). This relates to operationalising accountability, transparency, and trust. And these are instrumental to preventing the executive of the co-operative from capturing the decision-making process of the co-operative, thereby gaining control over setting the co-operative's objectives. This is not a natural outcome of being a co-operative. Such 'co-operative capture' would lead to a failure in co-operative governance resulting in co-operative outcomes converging to those of investor-owned firms, generating traditional monopoly-type outcomes. This would increase price and reduce consumer surplus and also increase the level of x-inefficiency.

Conclusion

The conventional wisdom and modelling of co-operatives by scholars sympathetic to the co-operative organisational form suggest that co-operatives should yield socially beneficial outcomes as compared to the traditional investor-owned firms by dint of the organisation being a co-operative. But I find that being a co-operative does not automatically translate into increasing or maximising social welfare. An employee-owned co-operative monopoly can yield the same sub-optimal economic outcomes as would an investor-owned monopoly. But in such a co-operative monopoly, the organisational structure of the firm and the preferences of decision-makers can be expected to yield higher levels of x-efficiency, and income can be expected to be more equitably distributed than in the investor-owned monopoly.

In the multi-stakeholder or solidarity co-operative, which represents a partnership between workers, consumers and other stakeholders, I find that outcomes can be both more x-efficient than in an investor-owned monopoly whilst also minimising any deadweight losses to society wherein prices mimic competitive pricing. Therefore, an MSHC increases the real income or purchasing power of consumers who are members of this broader, more embracing, co-operative. Also, the quality of output better meets the needs and preferences of co-operative

members which are synonymous with the broader community that constitutes the multi-stakeholder community.

I argue that this type of co-operative monopoly tends to be self-regulating because it incorporates both the preferences of producers and of the community that it serves. But such outcomes are conditional on the quality of co-operative governance. Self-regulation should not be expected if the management becomes disassociated from its membership base — a form of co-operative capture. With co-operative capture, the co-operative monopoly stands to revert to the behaviour of an unregulated investor-owned firm. This can only be precluded through appropriate organisational design wherein co-operative principles are core to the firm's management practices. But if co-operative principles are adhered to, co-operative monopolies that take on the form of multi-stakeholder or solidarity co-operatives, can be expected to be self-regulating and meet the needs of its broadly-based ownership community. This alternative to investor-owned monopolies, such as in the energy provision sector, saves on regulatory costs and provides greater assurance to government and to the community in receipt of the monopoly's output, that price and the quality and structure of output meet with the preferences of this community.

Note

1 In 2009, a set of co-operative rules were formulated to accommodate multi-stakeholder co-operatives. These are known as the Somerset Rules. In accordance with these rules, co-operative enterprises can be owned by more than one stakeholder. This broadens the membership base of the co-operative and also, in so doing, enhances the financial resiliency of the co-operative. These rules also allow for the financing of the co-operative by issuing shares to members and to outside investors. But outside investors have no voting rights. Members maintain control over the co-operative. The rules were revised in 2012 to include community interest companies and in 2014 regarding community benefit societies (CBS). The 2020 overhaul, whilst maintaining the integrity of the 2009 rules, includes charitable CBS, housing co-operatives, and 'Co-op lite' additions. Otherwise, the Somerset Rules closely follow co-operative principles (Somerset Co-operative Services CIC, 2020a, 2020b).

The Author

Professor Morris Altman is Dean of the University of Dundee School of Business and Chair Professor of Behavioural and Institutional Economics and Co-operatives. He was Dean of and Professor at the Newcastle Business School in Australia and was formerly Head of Economics and Finance and Professor at Victoria University of Wellington. He is an Emeritus Professor at the University of Saskatchewan, Canada. Morris has published over 120 refereed papers and 18 books in economic theory, co-operatives, ethics, and public policy.

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Appendix A

The following summarises the key revised co-operative principles most relevant to governance and therefore to the sustainability of co-operative organisational forms (Altman, 2009a; Eum, 2018; International Co-operative Alliance 2018a, 2018b):

Democratic control by members: One person, one vote, active membership participation, and elected officials responsible to membership. This incorporates a certain degree of hierarchical leadership since members need not and typically do not engage in day-to-day decision-making (reducing transaction costs). A key point here is that members have the last say on key decisions and are well informed of elected or appointed leadership decisions (transparency).

Democratic control of capital: Based on member contribution to a co-operative's capital (could be an equitable contribution). Part of capital is usually the common property of the co-operative. Surplus can be used for a variety of purposes as determined by co-operative members. Only part of the surplus is usually distributed to members. Surpluses can be used to build up reserves, to invest in the co-operative, and in the larger community. There is nothing stipulated in the rules pertinent to co-operative governance that surplus cannot be entirely invested to further develop or grow the co-operative. This would be similar to the investor owned corporation where the surplus can be invested or dispersed to shareholders as dividends or to management as bonuses; however, in the co-operative, surplus allocation decisions must be made in a democratic and transparent manner.

Autonomy and Independence: To maintain co-operatives as autonomous self-help organisations ultimately controlled by members, the terms by which co-operatives enter into agreements with other organisations, inclusive or private or public organisations, or raise capital externally (as opposed from members or surpluses) must ensure continued democratic control by members. Thus, co-operatives can link-up with non-co-operative organisations and even raise capital external to the co-operative, thereby relaxing or even removing constraints that are often assumed to be married to the co-operative organisational form.

Education: Co-operative members, elected representative, managers and employees are supposed to be educated and trained so they contribute to the development of their co-operatives as co-operatives.