



From Paucity to Inefficiency: The Case of Democratic Governance

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List of abbreviations

- The Thesis: Is short for the efficiency inference thesis, which implies that we can infer relative efficiency of an organizational structure from its relative prevalence.
- The Efficiency Branch: All scholars that propose that we can infer efficiency from prevalence are part of this group.
- LMF and CMF: LMF refers to a labour-managed firm and CMF refers to a capital managed firm. They are distinct in that who ultimately holds control over the production decision and over the distribution of revenues.

Abstract

The participatory governance on the workplace remains rare. Control does not follow ownership by logical necessity; why, then, is the capitalist enterprise so prevalent? Oliver Williamson, Michael Jensen, Henry Hansmann and some other scholars take the paucity of labour-managed firms (*i.e.* the prevalence of capitalist firm) as the evidence for the inefficiency of democratic governance. For support to this proposition, they turn to the early characterization of the evolutionary dynamics on competitive markets by Armen Alchian (1950). He argues that firms are selected for according to their relative profits, and that the relatively profitable production behaviour prevails on the markets. Similarly, the Efficiency Branch argues that it is the relatively efficient organizational form that prevails on the markets. Thus; if we observe an organizational form to be rare, this means that it is relatively inefficient. In my thesis, I show that the evolutionary argument employed in support of this proposition is incomplete. Prevalence consists of both differential survival and differential birth, therefore, we should also be able to explain how different organizational modes enter the markets. I introduce the appropriation hypothesis that suggests that capitalist enterprise is formed more often because it allows easier appropriation of benefits for certain groups, and not necessarily because it is technologically superior. As long as we define inefficiency in the terms of technological inefficiency, we cannot take the paucity of labour-managed firms as the evidence for their inefficiency.

I. The Aim of the Thesis, the Argument and the Structure

1.1 Introduction

The democratic ideal has not yet found its way in the economic system, especially not to the degree that it is accepted in the political sphere. We could say that the timocracy rather than democracy enjoys the organizational status-quo; the ultimate decision-making rights over the decision in the prevalent capitalist firm reside with the owners of the financial capital, and not with the workers to whom the decisions actually apply.

Many attempts have been made in the literature to explain the paucity of labour management. Organizational forms differ in the rate by which they enter the markets, and in the rate by which they exit them. Both, the emergence and the disappearance may be determined by many different factors. One way is to presuppose that efficiency is sufficient to account for the prevalence of organizational forms, and to develop a theoretical framework based on efficiency considerations only. If this is true, the theoretical framework can be validated simply by observing whether its predictions correspond to the actual organizational demography in open systems.

This has been attempted in the literature, and amounts to the propositions like the following: “If we *observe* that a particular form of ownership is dominant in a given industry, this is a *strong indication* that the form is less costly than other forms of ownership would be in that industry.” (Hansmann, 1996: 22, my emphasis). The empirical data about the low prevalence of workers’ firms is taken as the evidence of their relative inefficiency.¹ If an organizational form is to be relatively prevalent, we can infer its relative efficiency. This is the gist behind the efficiency inference thesis (the Thesis). The more visible scholars that hold this position are Oliver Williamson, Michael Jensen, William Meckling, Armen Alchian, Harold Demsetz, Scott Arnold, and Henry Hansmann. Following Williamson (1985: 26), I call this group the ‘Efficiency Branch’. If we can infer efficiency from prevalence, we can validate the hypothesis that capitalist enterprise is

¹The paucity of LMFs and the prevalence of CMFs are two sides of the same coin. This is so because I define an organizational form alongside the control; if control is in the hands of capital, it is a CMF, if control is in the hands of the labour, it is a LMF. This is discussed in section 1.2.

efficient by simply observing its relative prevalence. Williamson (1980: 35) upholds that “it is no accident that hierarchy is ubiquitous within all organizations of any size”, and continues that “both, the logic of efficiency and the historical evidence” disclose that democratically managed enterprises have low *survival* rate. That is, low prevalence of labour management discloses that it is *inefficient*.

The reference to survival rate is characteristic for the Efficiency Branch, which employs the evolutionary argument in order to support their propositions. Allegedly, competitive markets select for relatively efficient forms. In Hansmann’s words, “higher-cost forms of organization tend to be driven out of business by their lower-cost competitors” (1996: 22). The evolutionary argument is rather blindly adopted from Armen Alchian’s (1950) early contribution to the evolutionary theory of firm. Alchian argues that the competitive pressure on the markets *selects for* relatively profitable firms; the unprofitable firms are eliminated, while the profitable firms gradually prevail. Williamson and others translate the profitability of a neoclassical firm into the efficiency of an organizational form. Like *firms*, different *forms* – e.g. capital and labour managed – compete for scarce resources, and the more efficient forms are promoted by competitive markets, until they gradually prevail. Markets adjust the frequency of organizational forms in a population in such a way that predictions based on the efficiency framework are accurate enough to account for the actual population demography. Hence, the fact that workers’ firms are rare supports the hypothesis that they are relatively inefficient. This is not a marginal proposition, but enjoys the support of many important scholars in organizational theory and economics. As such, it may be partially responsible for the fact that democracy has not yet seen the light within an economic enterprise.

The above motivates my main research question. Is the paucity of democratic governance a ‘strong indication’ of its relative inefficiency? Even though there are many reference to ‘evidence’ by the Efficiency Branch, there is no elaboration on what evidence actually means. I hope I am not far off if I say that what they mean is that ‘the paucity of self-managed enterprise *justifies a belief in the hypothesis* that it is relatively inefficient’. Because valid evidence justifies belief in a hypothesis (Reiss, 2008), the main research

question translates into: Is paucity of democratic governance a ‘valid evidence’ for its relative inefficiency? I argue that this question can be replied in affirmative only if we can infer efficiency from prevalence. The truth of the Thesis conditions the validity of the evidence.

The aim in my thesis is to show that prevalence is not valid evidence for the efficiency of an organizational form, because we cannot infer relative efficiency from relative prevalence.² In order to defend my claim, I make the following steps in the argument. The evidence is valid if the Thesis is true; if we can infer efficiency from prevalence, we can argue that the efficiency framework can be validated if its predictions correspond to the actual empirical phenomena. The Thesis is allegedly supported by the evolutionary argument in the lines of Alchian’s (1950) early characterization of the dynamics of competitive markets. He argued that markets adapt the population of firms in accordance with the neoclassical framework; independent of how profitable behaviour is in relation to some global ideal, in the competition between two production strategies the more profitable will prevail in the population; if relatively profitable, then relatively prevalent.

The empirical data suggests that democratic control is very rare in economic enterprises. According to the Thesis, this implies that it is also inefficient. However, the theoretical arguments that deal with the efficiency of workers’ governance are not so unequivocal in this conclusion. All of the arguments that go against labour managed firms are countered with strong arguments, while some empirical tests even indicate technological superiority of the self-managed enterprise. This introduces a dilemma. If democratic governance is at least as efficient as capitalist enterprise, why is it so rare? The Thesis plays a crucial role in addressing this question, and so brings the dilemma in the centre of this research project; if labour management is relatively efficient, the dilemma is a dilemma only in the face of the Thesis. There are two ways to go after the Thesis, and solve the dilemma. Firstly, we argue against the Thesis indirectly; one could firmly establish on theoretical and empirical level that self-managed enterprise is an efficient form of production.

² While I focus on the notion of technological efficiency, I also defend my claim against the charge that efficiency in a more general sense prevails. I elaborate on the concept of efficiency in section 3.2.

Secondly, one could argue against the Thesis directly; the evolutionary argument does not actually support the proposition that better adapted traits (more efficient organizational forms) prevail in a population. I solve the dilemma with the second, and argue that the conception of evolution by natural selection as employed by the Efficiency Branch is deficient – capitalist enterprise does not necessarily endure as the dominant economic enterprise because it is more efficient. A brief glance to the empirical data shows that we should search for the explanation of relative paucity of labour management in differential formation rates, and not in differential survival rates as presupposed by the Efficiency Branch. While intentional explanation tries to explain higher emergence of capitalist enterprise by saying that it is also more efficient, I argue that there are problems with this account. In the face of uncertainty, and under the assumption that agents are boundedly rational, choice of more efficient organizational mode is problematic. One possibility is that agents simply enter the contractual relationships that are personally more beneficial. I show that this does not necessarily lead to more efficient organizational structures, because certain organizational forms allow higher appropriation of benefits for certain groups independent of their technological efficiency.

The main aim is to show that formation is important element with the paucity of LMFs, and that it cannot be explained by saying that LMFs emerge less often because they are inefficient. This provides a solution to the dilemma. If formation cannot be explained in terms of efficiency alone, so cannot be prevalence. Therefore, we cannot infer efficiency of an organizational structure from its relative prevalence – the Thesis is false. If the thesis is false, the theoretical frameworks by the Efficiency Branch are not validated by the paucity of LMFs.

1.2 Workers' Controlled Enterprise

Here, I briefly discuss the concept of an economic enterprise, and focus on the workers' managed enterprise. If a democratic mechanism is established in order to decide about

the production decisions and the distribution of the revenue stream within an economic enterprise, I call a labour-managed enterprise (LMF).

The early accounts on the labour and capital management discussed the firm from a perspective of the neoclassical methodology. Ownership and control had no relevance in the theory of firm; the main difference between workers' cooperatives and capitalist firms was that the first maximized the income per worker, and the second maximized profits. The quantity of production was the only variable, and efficiency was assessed in relation to the global optimal of Pareto optimality. The relevant question was: Will labour managed firm produce a quantity that makes it efficient? This changed with the rise of the New Institutional Economics (NIE). The firm was no longer a simple production function, but a bundle of ownership and control rights. The following four properties define a firm (Dow and Putterman, 2000):

- The right to appropriate the residual claims of the firm
- The property right over the net value of physical assets of the firm
- The right to transfer the bundle of rights
- The right to control the production decisions of the firm

The first three bundles are ownership rights. The right to appropriate the residual claims is the property right defined over profits. Profits are the net value of the revenues earned by selling a commodity with the costs of the capital (interests), land (rent) and labour (wage) deducted. The property rights over the net value of physical assets imply the right to the value of the factory, equipment and machinery, which are depreciated in the production process. The right to transfer the bundle of rights is the ability to transfer the bundle on mutually agreeable terms. NIE holds that an economic enterprise can only be efficient if the ownership rights are accompanied with the control rights (Alchian and Demsetz, 1972; Klein, Crawford, and Alchian 1978; Williamson 1985).

The fourth dimension are the control rights. Control rights must be defined in order to remedy the necessary incompleteness of the contractual relationship; to avoid exploitation of this incompleteness in self-favourable ways. There are different methods

of control, but only two are relevant for the purpose at hand. One is the authoritative relationship or centralized monitoring set up by the owners of the capital, and usually executed by hired managers (Coase, 1937, 1989; Alchian and Demsetz, 1972; Jensen and Meckling, 1979; Williamson, 1975). Another way is to implement a democratic mechanism of control (Dow and Putterman, 2000; Dow, 2003; Putterman, 2006). Doing so, an equal control is guaranteed over the issues that arise within the contractually unspecified domain either by the means of direct participation or representative democracy. When the participation is direct, workers have opportunity to personally influence decision making, by suggesting changes in the operation of the enterprise, or voting on the issues suggested by other employees. The representative system implies that workers influence decision-making indirectly, through an elected or appointed representative. The important point is that ownership does not imply control, or *vice versa*. The ability to disentangle the two introduces the possibility for workers to control the firm without their ownership over all the assets. Although some have proposed that the separation incurs costs (this is examined in the third chapter), there is nothing that logically links ownership and control.

There are roughly three main characteristics that define a workers' cooperative: (i) participation in decisions of the firm, (ii) profit sharing, and (iii) employee ownership (Bonin, Jones and Putterman, 1993). I take that participation in the decision making conditions the LMF. That is, as long as workers are in full control over the objectives of an enterprise and the distribution of its revenue stream, the enterprise classifies as workers' governed. The broad definition of workers' control implies equal decision-making rights about the decision made within the firms, independently of workers' skill, post, or capital contribution (Vanek, 1975; Bonin and Putterman, 1987). What are control rights? On one level, control refers to determining the objectives of the firm, the positions of the people within the firm (including the appointment of management), and their functions. On another level, control implies decisions about the conditions of work, the quality and price of the output, and the distribution of revenue stream among wages, funds and other investments. (Ben-Ner and Jones, 1995). While additional defining

taxonomies were made in order to further classify different forms of control within the self-managed firms, it is not necessary to dwell into deeper conceptual issues that arise around the matter of control. Simply, labour managed firms (LMFs) are firms where control rights are held by suppliers of labour, while capital managed firms (CMFs) are firms where suppliers of financial capital have the control rights. Whenever I will use the terms ‘workers’ cooperative’, ‘workers’ managed’, ‘workers’ controlled’, ‘labour managed’ or ‘labour controlled’ firm, and the like, the reader should take these as synonyms. Similarly, whenever I refer to ‘capitalist firm’, ‘hierarchical enterprise’, ‘modern corporation’ and the like, I have in mind an economic organization with hierarchical control structure.

1.3 The Structure of the Thesis and the Arguments

- Chapter II. Paucity: Evidence for Inefficiency of Workers’ Controlled Firms

In the second chapter, I review the literature that employs the efficiency inference thesis in the context of democratic economic governance. I introduce the evolutionary argument that is used to support the efficiency-inference thesis. I show that the Efficiency Branch largely relies on the ideas of Alchian (1950) and Friedman (1953). I show that Williamson, Meckling, Hansmann and others use paucity of LMFs in order to validate the hypotheses about inefficiency of LMFs that underlines their theoretical frameworks. The main aim of this chapter is to show that the validity of the evidence rests on the truth of the Thesis, which is largely dependent on the alleged evolutionary support.

I start the chapter by introducing the framework developed by Alchian (1950 and Friedman (1953) and show that they both rely on the efficacy of competitive markets to eliminate (relatively) unprofitable firms, and promote (more) profitable firms. They use this argument in order to show that - independent of intentions, motivations, and abilities of businessmen -, the markets will adapt the population in accordance with the predictions of the neoclassical framework. Profitability is the main criterion of selection, and is sufficient to drive the evolution of the firms. The idea was adopted by scholars like Williamson, Jensen and Meckling, Demsetz, and more recently by Arnold and Hansmann, in order to operationalize their theoretical frameworks: The organizational form that

prevails is more efficient. If their efficiency framework successfully predicts what type of enterprise will prevail, this allegedly supports their hypothesis. On occasions, the Efficiency Branch talks about ‘evidence’, but does not elaborate on the concept. I assume that it means ‘the justification of the belief about a hypothesis’ (Reiss, 2008).

This is roughly the outline of the proposition that the Efficiency Branch proposes: Markets select for more efficient organizational forms. If organizational form is relatively prevalent, it must be relatively efficient. The fact that LMFs are rare validates the hypothesis that they are inefficient.

- Chapter III. The Dilemma: If Efficient, Why Not Prevalent?

The main aim of the third chapter is to argue that the Thesis results in a dilemma, when we consider the possibility that LMFs are not an inefficient form of economic governance. If democratic governance is actually efficient, why is there not more of it?

First, I briefly elaborate on the concept of efficiency that I employ it in my thesis. I take a comparative institutional perspective and limit the concept of efficiency to technological efficiency; an organizational form is relatively efficient if it employs less inputs for a given output (or produces more by employing the same amount of inputs). The literature review of the arguments about the efficiency of LMFs takes the main chunk of the chapter. I focus on two most important criticisms; one was raised in the Property Rights School by Alchian and Demsetz (1972), the other in the Transaction Costs Economics by Williamson (1975, 1985) and later Hansmann (1996). On theoretical grounds, all arguments were disputed in the literature, however, the consensus on the issue has not yet emerged. One reason may be that LMFs endure in its paucity. But is this a valid reason to prevent a gradual divergence to consensus? If we seriously consider the possibility that LMFs are actually an efficient form of economic organization, this introduces “a serious analytical dilemma” (Dow, 2003: 8) in the light of the Thesis: If efficient, why are they rare?

- Chapter IV: The Evolutionary Argument Revisited: An Incomplete Conception of Evolution

In Chapter IV, I suggest that there are different ways to solve the dilemma. I propose a solution out of the dilemma, by arguing that the evolutionary theory does not support the Thesis. In the biological terminology; we cannot infer differential survival rate from the frequency of a trait in a population. From analogy, we cannot infer differential survival of an organizational form from its prevalence.

I first show that the misconception is based on the adaptationists programme, which explains the prevalent trait with their superior adaptation to the requirements of the environment. They do not deny the existence of other evolutionary forces, but insist that natural selection favours the better adapted, which gradually prevail in a population. The Efficiency Branch largely follows this idea. They take the efficiency of an organizational form to be the *main, but not the only* case, but nonetheless maintain that the efficient structures ultimately prevail on competitive markets. Granting this, they supply empirical content to their frameworks; if their predictions correspond with the empirical phenomena, this allegedly provides a reason to believe that the hypothesis is true. Their framework predicts LMFs to be inefficient, therefore it predicts LMFs to be rare. The fact that they are rare validates their hypothesis.

The problem is that there is at least one more component to the evolution of a trait, and the evolution of an organizational form. "Natural selection operates either by differential death or differential birth" (Stephen Gould, 1982: 101). Both, differential survival and differential birth may be important in order to explain the prevalence. Assuming the equality between survival and efficiency; inefficient organizational forms may prevail if they emerge more often. I conclude this chapter by considering the empirical data on organizational demography. I reach two important conclusions, that motivate the final chapter. Firstly, survival rates are about equal between LMFs and CMFs. Secondly, capitalist enterprises emerge much more often than democratically governed firms. This suggests that we should look for the explanation of differential prevalence in differential formation of LMFs and CMFs.

- Chapter V: An Attempt to Solve the Dilemma: Is Differential Formation Independent of Efficiency?

How to explain the differential formation between LMFs and CMFs? In the fifth chapter, I consider some possibilities. Can agents reliably ponder the costs and benefits of each organizational form, and decide for the most efficient one? Do agents engage in personally beneficial contractual relationships that promote more efficient organizational forms? I introduce the appropriation hypothesis and argue that higher emergence of capitalist enterprise may plausibly be explained independent of its efficiency.

Williamson introduces an intentional explanation and argues that more efficient forms are formed by deliberate individuals. There are at least two ways how individuals could potentially promote emergence of relatively efficient organizational forms. Firstly, they could intentionally search for the more efficient organizational forms. The problem here is that in addition to their good intentions, they should also be able to reliably find what organization is more efficient. Williamson admits that in the uncertain environment, an infallible search for relatively efficient forms is implausible. He concludes that natural selection holds the ultimatum in promoting the relatively efficient enterprises. But this brings us at the very beginning; we should be able to explain both survival and birth in terms of efficiency if we are to infer efficiency from prevalence.

There is another possibility that Williamson acknowledges. Opportunist individuals enter the most beneficial contractual relationships, which manifest in the more efficient organizations. I argue that this also is problematic. I introduce the appropriation hypothesis, which suggests that capitalist enterprise is formed more often because it better serves the interests of certain groups of agents; groups that are in control of the capitalist enterprise. Investors will be reluctant to invest in the creation of LMFs when they have a comparable project available under the capital-governed enterprise, because they can appropriate higher rents in the capitalist enterprise. Managers and high-skilled labour is reluctant to join LMF coalitions because they can appropriate higher wealth and status in CMFs. Finally, members of the prospective LMF will prefer to hire wage-labourers instead of new members, which leads to a gradual degeneration of the cooperative in a CMF. The appropriation hypothesis suggests that capital and labour is in limited access to LMFs, and that LMFs degenerate into CMFs more often. Importantly, it

helps to explain higher formation of CMFs independent of the actual technological efficiency of these enterprises.

II. Evolution of Efficient Forms: From Prevalence to Efficiency

2.1 Introduction

If an organizational form is efficient relatively to its competitors, it will gradually prevail in the population. Thus, an organizational form is prevalent *because* it has proven to be efficient on the competitive markets. The Efficiency Branch adopts this position, and applies it to the debate about labour management. LMFs have historically been rare, while CMFs endure in their dominance; this is indicative of the relative efficiency of a CMF over a LMF.

What is the theoretical link between the efficiency³ and prevalence? In his seminal paper - *Uncertainty, Evolution, and Economic Theory* (1950) - Alchian established a, evolutionary link between profitability and prevalence, which was later adopted by the Efficiency Branch in order to presuppose the relationship between the paucity of LMF and its inefficiency. Alchian employed the evolutionary argument to show that on competitive markets more profitable firms tend to outnumber the less efficient firms. The firms that we commonly observe on the markets are (relatively) profitable. Or so the story goes.

In this chapter I maintain that the Efficiency Branch takes the paucity of LMFs as the evidence of its inefficiency, while they use early evolutionary argument to support this position. In the next section I introduce the evolutionary argument by Alchian (1950) and Friedman (1953). Their main aim was to show that, independent of the motives or intentions of businessmen, markets promote profitable, and eliminate unprofitable firms. This allows economist to predict, on the basis of marginal analysis, the outcome of market dynamics. In the section 2.3, I show that this intuition was employed by the Efficiency Branch in order to take the paucity of LMFs as the evidence for their inefficiency. In the

³ For the purpose of this chapter, the precise definition of efficiency, that is, what characteristics make LMF efficient or inefficient, is not important. These issues are further discussed in the next chapter. It should be noted, however, that a tautological conceptualization will not do. To define efficiency with that-which-prevails undermines the usefulness of the concept of efficiency.

section 2.4, I discuss two concepts of evidence, and argue that only valid evidence justifies the belief in a hypothesis. In the conclusive section, I reintroduce the research question, which will be additionally illuminated by the conclusions of this chapter.

2.2 Alchian's and Friedman's Hypothesis

“The realization of profits is the criterion according to which successful and surviving firms are selected,” so that “if all firms are slightly different [...], those who have their fixed internal conditions closer to [...] the optimum position [in a given environment] will have a greater probability of survival. They will grow relative to other firms and become the prevailing type [...]” In general, in a competitive environment “the force of competitive survival [will] eliminate higher cost firms.” (Alchian, 1950).

The groundbreaking paper by Armen Alchian (1950) is especially relevant for the purpose of this chapter. Alchian proposed an evolutionary solution to the marginal controversy in the 1930s and 1940s. His seminal contribution was that the entrepreneurial intentions and motives are irrelevant in order to predict the industry behaviour. The criterion for the viability of the firms is determined by the competitors on the markets. Alchian took the realization of positive profits as the condition of survival. The scarcity of resources (*i.e.* revenues) dictates the competition, and determines the survival of more profitable and demise of less profitable firms. The profitability is a relative category; even in the world of fools there would still be profits for those who are a bit less fools, or just lucky. By the means of imitation and differential survival, the efficient production behaviour will spread in a population, while the inefficient behaviour will be eliminated. That is, on competitive markets, the impersonal forces seek to it that “those who realize positive profits are survivors; those who suffer losses disappear” (*ibid.*: 213). The prevalent firms are the firms that better comply with the marginalist criteria. It is worth to note that Alchian (1950: 220, my emphasis) is careful in saying that “the *observed prevalence* of a type of behaviour depends upon both [the] probability of viability [survival] and the probability of the different types being submitted to the economic system”, but goes on to disregard this potentially problematic point by saying that “there is much evidence for

believing that these two probabilities are interrelated”, and that even if the probabilities are not highly correlated, the aggregate behaviour would shift in a predictable way towards the more efficient solutions. This is an important insight worthy of a more nuanced consideration. It indicates that while the globally efficient outcome will not necessarily result from the competition on the markets, we can expect that relative efficiency nevertheless to determine the tendencies, and finally the outcome (firms’ prevalence) on the markets. This is the crucial point for Alchian, because he tries to defend the point that an economist may predict the direction of the change in an economy using the tools of marginal analysis, that is, by looking at the relative profitability of the behaviour. For example, when the real wages rise, *ceteris absentibus*, labour/capital ratio decreases. The *ceteris absentibus* prediction, however, is strong enough to account for the actual phenomena in the open system; the firms that employ more labour will become less profitable, therefore they will disappear from the markets. While Alchian aimed to provide a reason for successful predictions in the face of uncertainty, he indirectly defended the view that the prevalent firms are relatively efficient solutions to the requirements of the environment. The position along these lines was also defended by Friedman (1953).

In 1953, Milton Friedman published a paper that in certain way resembled the ideas introduced above. The point of agreement between the two is the evolutionary argument that supports the irrelevance of knowing and understanding businessmen’s motives in order to analyse the aggregate behaviour in the industry. In order to defend the profit maximizing hypothesis⁴, Friedman (1953: 22) cites the process of “natural selection [that] helps to validate the hypothesis or, rather, given natural selection, acceptance of the hypothesis can be based largely on the judgement that it summarizes appropriately the conditions for survival.” The competition favours firms that manage to secure maximum positive profits, while others will eventually be eliminated from the markets. The

⁴ This is an obvious point of departure between Friedman and Alchian. Friedman (1953) insisted that profit maximization results from the competition among the firms, while Alchian was careful to argue that positive profits are *sufficient* for survival, and that the globally optimal equilibrium might not result. This disagreement is irrelevant for the point of this chapter.

prevalent firms will be the efficient firms, because inefficient firms are “unlikely [to] remain in business for long” (*ibid.*). The prevalence of a firm is, thus, the evidence for its profit maximizing ability. But the evidence here is not empirical, or factual, as Friedman himself calls it. Instead, the evidence follows from the theoretical discussion of natural selection argument (Vromen, 1996: 37). While the actual validity of such ‘evidence’ for the aim of Friedman’s paper might be less relevant, it was picked up by the Williamson, Jensen, Demsetz, Arnold and Hansmann in the discussion of the paucity of workers’ management.

2.3 Does Paucity Justify Our Belief in Inefficiency?

The proposition that the prevalent organizational forms are more efficient than their competing alternatives is the core proposition of the Efficiency Branch⁵. Adherents of the branch believe that “widely *observed* organization forms are efficient because they are selected for” (Vromen, 1996: 79, my emphasis). The fact that hierarchical firms prevail over workers’ cooperatives allegedly provides the evidence for the hypothesis that the former are more efficient. In this section, I show that Jensen, Meckling, Demsetz, Arnold and Williamson all presuppose the efficacy of the markets forces to select for more efficient organizational forms.

“Those organizations survive that are able to deliver the activities or products at the lowest price while covering costs.” “In [a competitive] environment, *observed* behaviour and institutions will tend toward the optimal because those far from it will continually tend toward extinction.” (Jensen, 1983: 322, 331-2, my emphasis)

In contrast with the neoclassical theory of the firm, the New Institutional Economics opens the black box of the production function and studies - in greater detail - the ownership and control aspects of the firm. The competition thus selects not for a more profitable production behaviour, but rather for a more efficient organizational structure. The focus of this thesis is on the competition between capital managed and labour managed enterprise. The more efficient form is presumed to attain higher profits and

⁵ For a more detailed exposition of this position, see Vromen (1996: 51-82).

expand in relation to the less efficient form, which either restructures and imitates the efficient form, or gradually dies out. The competition among the organizational forms ensures survival of the form that “delivers the product demanded by customers at the lowest price while covering costs. Variation in costs stems from a variation in contract structure, which varies from firm to firm” (Jensen and Meckling, 1976). Williamson (1985: 22) similarly relies on the “efficacy of competition to preserve a sort between more and less efficient modes and to shift resources in favour of the former”, while he is careful to note that it is *more* and not *the most* efficient organizational form that is selected for (ibid.: 35). On another occasion - in a joint paper with Ouchi -, Williamson maintains that over time “those integrations move that have better rationality properties [i.e. are more efficient] tend to have better survival properties” (Williamson and Ouchi, 1983: 389). Efficiency causes differential survival, and while efficiency is not the *only* case that is relevant for prevalence of an organizational form, it is the *main* case. This is shared within the Efficiency Branch, and amounts to the proposition that the observed dynamics on competitive markets, and especially the long-term outcomes such as prevalent organizational forms, can be analysed through the lenses of the efficiency framework alone – if we see an organizational form to endure in its prevalence, this implies that it does so because it continuously wins the survival game, hence, it is more efficient. This was used in order to derive refutable implications from the theoretical frameworks within the Efficiency Branch.

Williamson (1975, 1980, 1985, 1991) argues that hierarchy is better suited for survival on competitive markets than the workers’ controlled alternative⁶, while the paucity of LMFs is the evidence for their inefficiency. The argument is, roughly, that the opportunism of agents makes authority necessary, while the authority is best imposed from the residual claimant. Similarly, bounded rationality does not allow democratic structure, because collective decisions incur inefficiencies on the labour managed firm. Williamson (1975: 54) predicts “that simple hierarchy can do everything the peer group [LMF] can do and more.” He hypothesizes that the hierarchical organization better reduces the frictions

⁶ For detailed arguments about the inefficiency of workers’ control, see section 3.2.

related to the opportunism in bounded rationality, thence it should prevail on the markets against the competing participatory economic governance. Allegedly both, the theoretical arguments and the long-lasting prevalence of hierarchy over the democratic workplace disclose that LMFs are inefficient (Williamson, 1980: 35). This leads Williamson (*ibid.*) to say that “it is no accident that hierarchy is ubiquitous within all organizations of any size”; it is ubiquitous because it is more efficient. CMFs indeed prevail, but the paucity of LMFs cannot be taken as the empirical evidence for their inefficiency (Williamson does not predict novel facts *in this case*⁷). Williamson, like Alchian and Friedman, employs an evolutionary argument in order to derive the evidence for his hypothesis.

Arnold (1995: ix, my emphasis) also relies on the evolutionary hypothesis to show that “the policies, procedures, and organizational forms that are found in free enterprise systems *exist* or persist because they are efficient”. The paucity of democratic governance, he concludes, implies that it must be an inefficient response to the economic environment. Hansmann, like Arnold, argues that due to “market selection”, “higher-cost forms of organization tend to be driven out of business by their lower-cost competitors” (Hansmann, 1996: 22). Hansmann argues that the inefficiencies of the participatory economic governance are reduced in situations where not many workers have to take the decision making positions, or where there is not much disagreement among them. He observes that the prevalent workers’ enterprises are predictably small and enjoy relatively homogenous workforce. Hansmann (1996: 91-2) says that “the most striking *evidence* of the high costs of collective decision making is the scarcity of employee-owned firms”, and concludes that “if costs associated with collective self-governance were not a problem, employee ownership would be far more widespread than it is”. The empirical fact that large cooperatives with diverse labour force are *few* testifies that they are *inefficient*. Because Hansmann defines the circumstances where we should expect more

⁷ I do not claim that this is true for Transaction Costs Economics in general. Williamson (1985: 130; 1999) has repeatedly cited an example of the successful predictions of novel facts. The prediction of the change from U-form to M-form organization is supposedly an example of a success story (Williamson, 1991). If this is true, the general framework is granted the empirical support, which then supports TCE in the case of workers’ management as well. These claims have, however, come under scrutiny. The empirical evidence has indicated some contradiction with the predictions of Williamson’s framework (see Robert David and Shin-Kap Han, 2004; Carter and Hodgson, 2006).

labour management, this allows for more nuanced predictions.⁸. The general point remains. Prevalence is taken to indicate relative efficiency. The validity of the evidence is conditioned by the validity of the evolutionary hypothesis: efficient structures gradually prevail.

The upshot of this section is that the evolutionary argument allegedly supports the proposition that the efficient organizational forms gradually prevail, hence we can infer relative efficiency from relative prevalence. This allows the Efficiency Branch to take the paucity of the democratic governance as the evidence of its inefficiency.

2.4 Prima Facie and Valid Evidence

Jensen, like Williamson, Meckling, Arnold and Hansmann, thinks that “the *evidence* is clear; in the production of a wide range of activities, the corporation continues to win the competition for survival [that is, continues to be the dominant form of organization]” (1983: 328, my emphasis). Empirical data about the relative prevalence allegedly provides the evidence that justifies our belief about the truth of Jensen’s hypothesis. This section clarifies the concept of evidence, and argues that only valid evidence justifies the belief in a hypothesis.

The concept of evidence is problematic, and has been widely discussed among the philosophers of science. The in-depth analysis is not important here; I will only introduce the concepts that are relevant to understand what kind of evidence we need in order to justify our belief in a given hypothesis. The evidence should justify our belief in a hypothesis, if we are to accept a hypothesis to be true. The problem is that even if an empirical phenomenon corresponds to the prediction of our theoretical framework, this does not necessarily mean that we are justified in accepting our hypothesis. In fact, there may be infinite number of hypotheses that are consistent with our observation. This is

⁸ Williamson’s framework does not allow such predictions, because it predicts a universal inefficiency of LMFs. Hansmann’s hypothesis is more easily checked against the data, and so potentially refuted. The problem is, however, that the predictions of his framework are not fully compatible with empirical data. The success of Mondragon and the workers’ buyouts of financially troubled capitalist enterprises counter his predictions (see section 3.2.2). Thus it would be difficult to claim that his framework complies with Lakatosian or even Popperian ideal.

the famous problem of underdetermination of scientific theory. It opens the following question: When can we say that an observation, a report, or a measurement exhibits evidence for a hypothesis? Or to put it in slightly different way, how to choose the best hypothesis for given evidence?

There are different ways to establish the relationship between a hypothesis and an empirical phenomenon. In my thesis, I rely on the explanatory relationship, which “is the most promising theory [of evidence] so far” (Reiss, 2008: 5). In order for e to classify as evidence for h , h must (at least partially) explain e . A football player might be an evidence for the hypothesis that the ball we observe in the air had been kicked, because the footballer’s kick of the ball would explain why the ball is in the air. I will here largely talk about causal explanation, although an explanation is not necessarily such. Thus; an empirical phenomenon provides the evidence, if and only if it is caused, either directly or indirectly through an intermediary factor, by the hypothesized *explanans*. In the context of our example; a kick might had caused a ball to be in the air.

At least two types of evidence can be distinguished. The first is ‘prima facie’ evidence. It is defined by its relevance for the hypothesis. Seeing a footballer under a flying football is prima facie evidence for the hypothesis that she had kicked the ball. But this causal inference might be spurious, because she might had thrown the ball with her hands. In order to move from prima facie evidence to genuine cause, the alternative hypotheses should be ruled out (Reiss, 2008). For example, we have to take a closer look at the footballer, and see whether she might be wearing goalie gloves, which would complicate the matter. If she is rather a striker than a goalie, if the game is on, if an attentive official is standing close to her, and if he is not calling a hand-foul, this would strengthen the evidence for the hypothesis that ball was kicked rather than thrown. If there are no viable⁹ alternative explanations for the flying ball, we can call such evidence ‘valid evidence’. Prima facie evidence is weaker than valid evidence, because it only requires relevance of the hypothesis, while valid evidence requires all the viable alternative

⁹ Viability here will be left arbitrary. There is always an alternative hypothesis. Viability will imply something that is more than only possible, but less than certain, therefore, something that is plausible.

explanations to be ruled out. Valid evidence justifies our belief in the hypothesis (Reiss, 2008).

If we are to take the paucity of LMFs as the evidence for inefficiency, the evidence should be valid. Only then are we justified in our belief that LMFs are indeed less efficient than CMFs. Relative prevalence is valid evidence for relative efficiency, if we can rule out the alternative (non-efficiency related) viable explanations of prevalence.

2.5 Concluding Remarks

I do not necessarily disagree with the proposition that, *ceteris absentibus*, efficient economic forms spread in a population of firms. That is; if all other causally relevant factors are absent, more efficient organizational forms will attain higher profits, will invest more resources and grow faster, and will be imitated by the inefficient competitors, so to eventually prevail in the population. In the terminology of the previous section, I grant that the prevalence provides prima facie evidence for superior efficiency; the evolutionary argument establishes a causal relation between relative efficiency and differential survival.

Jensen, Meckling, Williamson, Arnold and Hansmann, to name just a few, make an additional step and argue that the paucity of LMFs actually justifies our belief in the hypothesis that LMFs are relatively inefficient. They presuppose the evolutionary argument of Alchian and Friedman in order to take the paucity of workers' controlled firms as valid evidence for their relative inefficiency. But we do not live in the world of 'everything else being absent', thus, we presuppose that the prevalence is valid evidence for relative efficiency.

This leads me to the main research question: Can we assume that efficiency is the main case, and that it is sufficient to address the prevalent organizational forms? That is, can we assess the relative prevalence in terms of relative efficiency alone? Or to put it somehow differently; is paucity of LMFs valid evidence for their inefficiency?

In the next section, I take a closer look at the theoretical arguments about the efficiency of workers' control in an economic enterprise. If there is a consensus in the literature

about the hypothesis that CMFs are indeed technologically superior to LMFs, this would be a first sign to trust the Thesis. If, however, it turns out that the theoretical arguments actually indicate higher efficiency of LMFs, and if, in addition to this, the empirical evidence actually indicates paucity of democratic governance, we might have efficient organizational forms that have historically been the underdogs. In the light of the Thesis, this introduces a dilemma.

III. The Dilemma: If Efficient, Why Not Prevalent?

3.1 Introduction

The previous chapter concluded that the evolutionary argument allegedly leads to prevalence of efficient organizational forms on competitive markets. The possibility that democratic governance is a relatively efficient form of economic governance, and the actual paucity of democratic governance are incompatible with the proposition of the Thesis. A brief look at the literature, however, suggests that LMFs are not necessarily inefficient, theory predicts that they can be at least as efficient as CMFs, but they are indeed very rare if compared to the prevalent capitalist enterprise. The main aim of this chapter is to argue that this poses a dilemma: If LMFs are not inefficient, why are there not more of them?

“A serious analytical dilemma”: “Both theory and empirics suggest that labour managed firms are, at least, as efficient as their capitalist rivals, and possibly more efficient. Why, then, have they not been able to compete with and conceivably outperform capital-managed firms in market dynamics?” (Dow, 1993: 8)

I start the next section by briefly discussing the concept of efficiency as employed in this chapter, and also referred to in the rest of the thesis. In the rest of the section 3.2, I dwell into the literature on the efficiency of LMFs. I consider two main arguments that were proposed in order to show that participatory governance is inefficient; LMFs are inefficient because they do not provide an efficient incentive scheme, and because the collective decision process is costly. I show that both arguments are disputed. Peer control may lead to cheaper and more effective monitoring, while an appropriate constitutional design of a LMF may prevent the inefficiencies with democratic decision making. In the section 3.3 I introduce the empirical evidence about the paucity of LMFs. Last section summarizes the main points, introduces the dilemma, and bridges this chapter with the next.

3.2 (In)Efficiency of Workers' Controlled Enterprise

"Jesus Christ, the monkeys are going to run the zoo?" A reply from a financier to a loan application by workers, who wanted to buy the Vermont Asbestos Group (in Doucouliagos, 1990).

The tone of the claims against workers' control is (usually) less harsh. However, many share the intuition that workers cannot and have never had efficiently run an economic organization. Does workers' control over the decision process implies technological inferiority against the capitalist control over the production process and distribution of the revenues? I argue in this section that workers' control is not necessarily inefficient on itself; different measures can be taken to actually increase the technological efficiency relative to capitalist enterprises. This section outlines the two central arguments against LMFs. The first was raised within the Property Rights Literature, and is related to the efforts of workers. The second point comes from the Transaction Costs Economics and relates to the inefficiency of democratic decision making.

Until now, there was no real need to provide a conceptual clarification of the efficiency; the way in which we assess the efficiency of economic enterprises. It sufficed to avoid a tautological formulation, and to assume that efficiency results, in one way or another, in a profitability of an economic enterprise. Before dwelling into the literature about the efficiency of the two organizational forms, I first have to define more precisely what I actually mean by efficiency.

Firstly, what do I *not* mean by efficiency? Productive efficiency and allocative efficiency assess the efficiency of an organizational structure in relation to some global optimum (such as Pareto optimality) and not in relation to the alternative organizational form. This is the approach adopted within the neoclassical theory of the firm. In the New Institutional Economics, the efficiency of an organizational form is assessed in relative terms (Coase, 1964; Williamson, 1975, 1981, 1985, 1989, 1991; Alchian and Demsetz, 1976, 1979; Demsetz, 1991; Jensen and Meckling, 1976, 1983; Fama and Jensen; 1983). I limit the concept of efficiency to technological efficiency. In accordance with the accepted usage in the literature, an organizational form is technologically superior to

another if (i) it produces more output using the same amount of input, or (ii) produces the same output by using less input.

Williamson (1981) identifies three levels of organizational efficiency. The first level relates to the overall structure of an organizational form. The question here is in what way should the operating parts be related. The second level looks at the boundaries of an organization. This relates to the title of the seminal book (Williamson, 1975); where is the boundary to the market transactions, and where is the limit of hierarchically organized production? The third level deals with the internal organization of labour and authority. This level is concerned with the human asset characteristics of the internal transactions, and with the employment relationship. I focus on this third level of efficiency analysis.

In the literature, two factors were recognized as most relevant for the efficiency of internal structure. One is the incentive scheme, and the other is decision making process. Jensen, Meckling, Alchian, Demsetz, Williamson and their contemporary followers all argue that a capitalist enterprise is relatively efficient solution to the incentive problem and costs of the decision making. I will scrutinize their arguments in turn.

3.2.1 Free-Riding Problem

As human beings we appreciate both; the pecuniary fruits of our labour and our leisure. We are motivated to be compensated above our effort level, or to decrease our effort level to increase our leisure time. Workers managed firms have often been criticized because they do not provide an authoritative relationship that would ensure effort appropriate to the wages. Within the Property Rights School, arguments have been developed that show why the internal organization of labour in LMFs does not provide good incentive schemes, making democratic governance inefficient. That is, the total output weighted by the sum of all inputs is larger in CMFs.

A metaphor can be established between a musical performance and the production process within an economic enterprise; very good, trained ears, and attention by the listener are necessary in order to reduce the harmony of the sound to the contribution of each musician and her instrument. In the same, it is difficult if not impossible to reduce

the output of a team effort to the effort of each worker – observing a loaded truck does not tell us much about how much effort each of the two workers contributed. If all are equally rewarded and not supervised, each worker can profit individually if she free-rides on the efforts of the others. This introduces the free-riding problem.

“[Monitoring] connotes measuring output performance, apportioning rewards, observing the input behavior of inputs as a means of detecting or estimating their marginal productivity and giving assignments or instructions in what to do and how to do it.” (Alchian and Demsetz, 1972: 782)

Alchian and Demsetz characterize a firm with two distinguishing features: team production and a hierarchical control over the contracts. They argue that hierarchy has to be established in order to ensure a full compliance of workers' efforts with the wage they are paid. Monitoring incurs costs, but reduces shirking. Where the net benefit is the largest, this is the most efficient structure of governing the economic organization. The authors are interested in the most efficient way to control the workers without incurring too much costs. They argue that the most effective way is to establish monitoring of the effort, while the monitor should be the residual claimant, ultimately controlled by the competitive markets. The most efficient control is thus provided by the owners of the assets, who are also the appropriators of profits. In this way, the monitor has personal interests in a good team performance. The means of her authority is the control over the firm and the assets, and most importantly over the workers, who she may discipline by credible threats of firing, lowering wage, and other incentivizing possibilities. The upshot is that workers in LMF would not control themselves as efficiently as the central authority, who itself is controlled by the markets.

The first thing in the response above is to shed some doubt on the actual efficiency of the monitor. Do residuals (or managerial bonuses) indeed ensure effective monitoring? The residual claims do not truly ensure effective monitoring, when the monitor has the control over workers. Nothing really prevents her to shirk, lie about observed efforts of the workers, and lower their wages or fire some to reduce costs in order to retain higher remuneration (Dow and Putterman, 2000). The solution to the free-riding problem could

then be to simply hire an external monitor. Dow (2003: 180) argues that the Property Rights School fails to show “why it is specifically capital suppliers, rather than non-capital-supplying principals or insurers, who have control over the firm”.

Another way to argue in favour of self-management is to search for a solution to shirking within such enterprise. It was speculated in the literature that the free-riding problem may be solved more efficiently with a peer-review. The argument is that workers can establish a mutual monitoring scheme that at least as effectively safeguards against the free-riders, while it costs much less because there is no need to hire and pay the monitor. There are two origins of incentive for the workers under the peer-review. The first is the lack of authority itself. Workers are given a fair amount of independence and participatory agency, which usually leads to their acceptance of responsibility. More importantly, social pressure and sanctions by the fellow workers function well to discourage shirking. Within cooperative environment, disapproval rates against the shirkers have been recognized to eradicate any attempts to free-ride on the efforts of co-workers (Weitzman and Kruse, 1990; Bonin, Jones and Putterman, 1993).

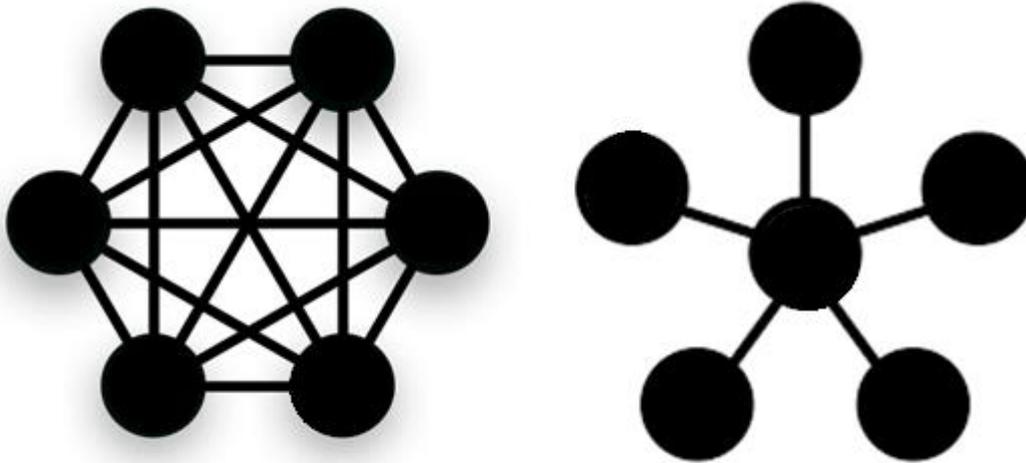
The upshot is that the shirking can be curtailed in LMFs. In addition to the counterargument raised in this section, there appear to be significant empirical evidence against the stories that workers’ cooperatives suffer from shirking (Baker, 1988; Bonin et. al., 1993; Wagner, 1994). Free-riding does not appear to be a relevant problem for the workers’ governed firms. As one of the critics of labour management himself maintains; “[the] employee ownership holds the promise of significant efficiency advantages including improved employee productivity [and] avoidance of opportunism” (Hansmann, 1996: 74-5). Hansmann argues that free-riding can be reduced rather than increased in the workers’ managed firms, but remains largely sceptical about the efficiency of the collective decision-making within LMFs. Admittedly, the reply in the literature seems to be less convincing in this case. I consider the arguments in the next section.

3.2.2 Collective-Choice Problem

Participation of the workers in the decisions of a cooperative is central to the definition of workers’ enterprise as employed in this thesis. Participation is a process where

influence is shared equally among individuals who otherwise may be in a hierarchical relationship (Wagner 1994: 312). Unlike in the capitalist firms where all investors are supposedly interested in the profit maximization; the interests of the many decision makers within a firm often clash if an enterprise employs diverse profiles of workers with high heterogeneity of interests. One of the important reason is that they are not part of the enterprise only on the basis of remuneration – they are physically present on the workplace, live close or far from the factory, and so on. This may lead to conflicts and other inefficiencies. In this section I question the claims that democracy in a firm is necessarily a costly process.

Oliver Williamson (1975, 1980) was one of the first to argue that hierarchical organization of the decision making process economizes on otherwise costly and time-consuming participatory governance. The main argument proposed by Williamson is that hierarchical firms are more efficient because they better economize on bounded rationality and opportunism. While the consequences of workers' opportunism were already studied in previous section, the focus here is on the limited cognitive abilities of the decision makers. Williamson made a distinction between centralized and decentralized decision making. In a peer group, he argues, each worker contributes to the collective choice by the means of voting on each separate issue. The main claim he proposes is that voting about every issue of production, allocation and distribution within a firm is a costly process. Consider the two network topologies below. Williamson argues that the communication and joint decisions in a peer group are confronted with severe limitations because the number of linkages in the All-Channel Network increases non-linearly (left). Even if the problems with large groups would somehow be eliminated, there are economies of communication with the Wheel Network (right) that cannot be realized in a decentralized network; especially with frequent routine tasks and the decisions that have to be made on the spot, the central governance is more efficient.



The All-Channel Network (left) and the Wheel Network (right)

Williamson seems to assume that any kind of hierarchy within the workers' enterprise is impossible. He takes the peer group as some kind of a "council democracy", where every worker connects to the other worker, creating a complex web of communication, interaction, and reconciliation. Some years later, Williamson (1980) extends this framework and allows for the possibility that the Wheel Network may be adopted within the peer group. But again, he restricts the possibility of hierarchy too much; he considers a mechanism of rotation, where all workers would rotate to occupy it at some point. He considers this to be an alternative way to make decisions within the LMFs, and argues that this is also inefficient, because talents are distributed among workers unequally. Unless managing a particular is simple and undemanding, or unless workers are relatively homogenous in their qualifications and skills, the decision making process are necessarily occupied by the less able at some point in time. Thus, there is a necessary trade-off between managing performance and participatory economic governance.

The main point of criticism against Williamson is that he does not consider the representative democracy as the possibility for the decision making within economic enterprises. But before criticising Williamson's argument, it is necessary to first contextualize it. In these accounts, Williamson largely defends hierarchy against Marglin's (1974) criticism. Marglin argues that the only function of the authority in a capitalist

enterprise is to find himself a function in the production process, and to appropriate large share of the revenues stream. In reply, Williamson justifies the hierarchy in the decision process, but does not necessarily justify the capitalist enterprise against the labour managed firm. Putterman (1984) argues that the solution to Williamson's point resides in the representative democracy. In the representative democratic economic governance workers vote for their representatives who take the place of the decision makers for a given period of time. The main difference between LMFs and CMFs is who elects the representatives, and who ultimately controls them. The representative system is a solution to Williamson's criticism. Firstly, it resembles the Wheel Network system and deals with the first set of Williamson's arguments. Secondly, the representative system undermines the criticism of the rotating system, because workers elect for more 'able' representatives.

"I do not see why a board of directors elected by the employees could not select managers as competent as those selected by a board of directors chosen by banks, insurance companies. or the managers themselves. The board of a self-governing firm might hire a management team on a term contract in the way that a board of directors of a mutual fund often does now-and also fire them if they are incompetent." (Dahl, 1970. p. 21)

Does this save the cooperative against the criticism? It should be true that the elected representative by the workers is at least as capable of effective managing as the manager elected by the shareholders. Dahl (1970) argues that workers are at least as competent in selection managers as the investors-owners are. The problem resides elsewhere. It enters if we consider the problems with the decision process itself, when there are heterogeneous interests in play. This is one of the most important recent argument for the inefficiency of LMFs (Dow and Putterman, 2003).

Hansmann (1996) is a contemporary theorist who draws on the Social Choice Theory to argue that there are costs inherent to a collective choice. He claims that "the cost of collective decision making [...] play a surprisingly strong role in determining whether employee ownership is viable" (Hansmann, 1996: 79). The core of the argument

represents the divergence in workers' interests and the relative unanimity of shareholders' interests (Hansmann, 1996: 90). Because all the shareholders predominately follow the maximization of the present value, that is, maximization of profits, there are supposedly not many conflicts in the decision making process. If and when the disagreements arise, they can easily be remedied with a corporate law. Workers, on the contrary, appreciate different things with different subjective weights. They may disagree about the wage differences within a firm. They may disagree on the relative importance of the job security, or on the importance of working conditions. They may disagree on the appropriate length of their paid vacations. The heterogeneity is greatest in the cooperatives that employ highly diverse labour, that is, professionals from different areas of expertise with different qualifications. The key to the difference in the degree of unanimity among workers and among capitalists is that workers must be physically present in the working environment, and that they are often risk averse due to their lower relative wealth (Dow, 2003). The subject of compensation, namely the difference in pay, is the most obvious bone of contention.

Why is heterogeneity of workers' interests relevant for the efficiency of self-managed enterprises? The argument is that the conflicts and disagreements incur costs, namely the costs of collective decision making (Hansmann, 1996; Benham and Keefer, 1991; Kennan and Wilson, 1993). Costs of collective decision making occur when the interests among the decision makers differ. In order to make decisions, workers may bargain and try to reach a compromise. Bargaining is conventionally defined as "the process of arriving at mutual agreement on the provisions of a contract" (Kennan and Wilson, 1993: 45). This is a highly inefficient solution, especially when there is a disagreement among the workers on key issues. These disagreements either lead to delays, or in the extreme, the agreement about efficient solutions about some problems may never be reached. Delay is costly due to the opportunity costs of the benefits that the early agreement would convey. No agreement is costly because of the opportunity costs of not reaching the mutually beneficial agreement in the first place (*ibid.*). The problem of bargaining is

most obviously remediable with the voting mechanism. Democracy on the workplace, however, itself suffers from certain inefficiencies.

First are the costs of inefficient decisions. Inefficiency may reside in the result of the democratic process – this may be avoided with a dictatorial (hierarchical) decision process (Hansmann, 1996). When most votes count, the median voter decides upon the issues. If the median voter prefers the inefficient solution – from which he may personally benefit - this results in costs for the enterprise. Consider, for example, a decision to build a parking lot. If accepted, the solution to the commuting problem would save money on the long run for the collective as a whole, but temporarily decrease the wages for all workers. If the median voter expects to retire or leave the enterprise before the lower costs lead to higher wages for all, she is motivated to vote against the decision (a variant of the horizon problem). Hansmann argues that hierarchically governed enterprise does not face such costs, because the shareholders would recognize the profit maximizing decision and unanimously agree to build the parking lot.

Second are the costs that are inherent to the decision process itself. The gist behind the idea is that when there is no unanimity among the workers, and especially when the interests diverge strongly, the electoral processes may generate inefficiencies because of cyclical outcomes. Arrow (1950) has shown that there is no voting system that would satisfy all the pre-specified criteria of a good collective choice, when at least two voters face at least three choices. Zusman (1992) was interested in the application of this insight for the cooperative's collective-decision process. He shows that the famous impossibility theorem acts so to increase the uncertainty associated with the group choice, while these risks can be lowered only by an increase in bargaining costs. The problem of cyclical outcomes may arise when the majority rule is applied. Consider the following profile.

Preference profile (1): Job security > working conditions > salary

Preference profile (2): Working conditions > salary > job security

Preference profile (3): Salary > job security > working conditions

If voters are equally distributed among all three preference profiles, the majority rule applied to the example above results in a cyclical outcome. That is, each outcome is preferred by an alternative by a majority of voters. 'Job security' is preferred to 'working conditions', 'working conditions' to 'salary', and 'salary' to 'job security'. These cycles lead to inefficiencies if there are costs to firm changing its policies (Hansmann, 1996: 42). The same problem would apply if workers vote for a representative, if each profile above represents representative's preference, and workers have to decide among the three representatives. The possibility of a cyclical outcome is not the only problem related to the collective choice.¹⁰

In a nutshell, there some important factors that make collective choice inefficient. Bargaining is costly when the interests diverge. If these inefficiencies are solved with a voting system, this may incur other costs. The democratic process may result in an inefficient choice, if the median voter prefers the costly outcome because of her self-interested reasons. Other inefficiencies may arise from the voting procedure itself, such as cyclical outcomes.

Solutions? Hansmann (1996, Ch. 5 and Ch. 6) shows that the cyclical outcomes can be avoided by different controls of the decision agenda, but further argues that all incur some costs that disadvantage LMFs against CMFs. A firm could carefully also screen new members and ensure sufficient homogeneity of interests. Relatedly, a LMF can eschew an extensive division of labour, or avoid employing workers with large skill differentials. Next, firm can increase equality of pay in order to avoid conflicts of interests. It could, possibly, stay at the suboptimal levels and decrease the number of decision makers. Each of those measures incurs inefficiencies (Hansmann, 1996; Dow, 2003; Dow and Putterman, 2000). The only solution Hansmann sees for these inefficiencies is to limit the scope of the participation by the workers in a firm. He recommends the governance structure of the firm to be designed so to decrease the number of proposals per worker, replace the democracy with the participatory democracy, or supply different weights in

¹⁰ For a review of different problems and inefficiencies that arise from the collective choice rules, see Gaertner (2016).

the electoral procedures where interests strongly diverge. But these solutions would convert a LMF into a CMF, according to our definition.

Different solutions to the problems above have emerged in the literature. In response to the point that cyclical outcomes may incur costs, Zusman (1992) argued that the collective choice rules may be *chosen* so to minimize the sum of collective choice costs. Arrow's impossibility theorem can be resolved efficiently in the constitutional phase of a workers' cooperative; a collective decision for a collective-choice rule must be a decision for an electoral procedure that minimizes the costs of the decision process. The efficiency is so guaranteed by some kind of meta-electoral procedure, which decides upon what choice rule to adopt. For example, before forming a LMF coalition, members could agree to solve the cyclical problems, when arise, with the assignment of subjective probabilities to each of the alternatives in the cycle. If 'job security' is preferred to 'working conditions', 'working conditions' to 'salary', and 'salary' to 'job security', each has 1/3 chance of being accepted.¹¹

Even if we accept Hansmann's argument that a homogeneity of interests leads to a more efficient decision processes; we can try to convince workers to reach an agreement about the homogeneity rather than to accept the heterogeneity that may incur inefficiencies. Pencavel (2001) and Schwartz (2012) argued that homogeneity does not condition the viability of workers' control, it is rather the opposite - workers can take the control over the homogeneity. Schwartz (2012: 255) poses the following dilemma; "if homogeneity is necessary for employee ownership, why cannot it be both a condition and a choice?". If we take homogeneity as the outcome of a deliberate decision of the workers intended to decrease the costs of collective choices, this provide a remedy for workers' cooperatives. One important example of this is Mondragon, which adopts the representative decision process, and adopts relatively flat pay scheme in order to avoid the conflicts that may arise from the disagreements on pay differences. Another relevant case are workers'

¹¹ To push the criticism; how to come up with an efficient meta-electoral procedure? It seems that the same problems may arise, if there is disagreement about what electoral procedure will be most efficient. Thus, a meta-meta-electoral procedure has to established. Ad infinitum.

buyouts of financially troubled hierarchical firms (Dow, 2003). These are common even when there is no homogeneity *prior* to the restructuring, while the homogeneity of pay is often adopted *posteriori*.

This section leads me to the conclusion that the collective choice problems are a serious threat to the efficiency of a democratic enterprise. Hansmann develops strong arguments that are not easily remediable. The solution to seems to reside in the design of an enterprise – if workers agree upon an appropriate decision process, they may prevent conflicts, avoid inefficient outcomes, or eliminate the cyclical outcomes.

3.3 Paucity of Workers' Control

The section above indicated that there is currently no consensus about whether LMFs are technologically inefficient form of economic organization. In the following section, I very briefly look at the empirical data that indicates that workers' managed firms are a rare form of economic governance.

When talking about the prevalence of an organizational form, a great deal depends on how one defines an organizational form. It is clear from the above that the concept of workers' *cooperative* is vague in a sense that there are many different aspects of cooperatives. We can thus look at the prevalence of workers' control in economic enterprises, their claims over the residual, property rights over the assets, or any combination of the three. Profit sharing, for example, is quite prevalent form of workers' engagement. In the United States, Employee Stock Ownership (ESOP)¹² employs over 15 million people, which is roughly 10% of the all employment in 2015 (Bernstein, 2016). This is a large part of the labour force, thus profit sharing could hardly be classified as only a marginal organizational form. In my thesis, as emphasized, I delimit workers' cooperative with control rights over the decisions about the production process and about the financial concerns. With control conditioning the economic enterprise under discussion, numbers about prevalence are not as encouraging. Within European Union, only half a million of the workers participated in the decision making (Bonin et. al. 1993), which, given that there is more than 200 million people that classify as

¹² ESOPs are contribution plans where the contributions are typically shares of stock in the company.

employed or unemployed, amounts to roughly 0.2 percent of the labour force (source: Eurostat). Although the numbers vary from country to country (Italy has the highest presence of workers' participation with 2.5 percent of non-agricultural labour force involved), we can safely conclude that LMFs are rare.¹³

3.4 Recap and the Dilemma

Control does not follow from ownership by a logical necessity. Workers' control is both possible and viable, and the fact that hierarchical control by the owners of the capital prevails on the markets requires an explanation. The Efficiency Branch develops theoretical frameworks in order to explain why capitalist enterprise is more efficient form of governance. The fact that control is concentrated in the hands of capital owners has an economic logic: it is more efficient, and what is more efficient prevails.

In this chapter, I have explored the theoretical frameworks surrounding discussion about inefficiency of democratic governance. I did not intend to go into the details of the debate, but rather to characterize the ongoing debate that has not yet resulted in a consensus. To do so, I have outlined two main arguments against efficiency of labour management, and argued that either can be remedied if self-managed enterprise is structured appropriately. Nevertheless, numerous questions remain unaddressed. How should workers participate in the decision making process of the enterprise?¹⁴ To what extent should they participate, so that we avoid extra costs of the participation?¹⁵ What is the effect of a more egalitarian wage distribution?¹⁶ Despite leaving these, and many other, questions untouched, the claim of the chapter stands; from the theoretical discussion, we cannot conclude to the inefficiency of LMFs. I withstand from proposing a

¹³ Similar conclusions were made by Fakhfakh *et. al.* (2009), Artz and Kim (2011), Schwartz (2012), Zanotti (2012) and Groot and Linde (2015).

¹⁴ Whether the participation should be in the form of either direct democracy or in the form of representative democracy have not been studied here in detail. It all seems, however, that some kind of hierarchy is necessary to establish efficient decision making processes.

¹⁵ Hodgson (1982) argued that the optimal amount of workers' participation depends on four variables: (i) output, (ii) job satisfaction, (iii) wages, and (iv) management security. He shows that managerial security is in conflict with the optimal labour participation in terms of output and workers' satisfaction.

¹⁶ Kremer (1997) argues that the egalitarian distribution of remuneration in the LMFs disincentivizes the workers whose productivity is above the wage they receive. Baker (1988) and Bonin, Jones and Putterman (1993) have all provided arguments that show positive effects of equal pay.

stronger, but also plausible claim; the theoretical arguments and empirical evidence suggests that LMFs are actually more efficient than CMFs (Hodgson, 1982; Bowles and Gintis, 1993; Dow and Putterman, 2000; Dow, 2003; Schwartz, 2012). In addition to the above, I have presented the empirical evidence that indicates the paucity of democratic governance. What are the implications of these two conclusions?

“The basic dilemma is this: If producer cooperatives mitigate the disabilities that many social scientists and social commentators associate with Authority Relation, why is the record of producer cooperatives so weak?” (Williamson, 1985: 265)

If peer monitoring within LMFs can potentially be more effective; if employees are more involved and better motivated as part of the participatory control structure; if the costs related to collective-choice problem may be decreased and equated to the costs of the hierarchical decision making - we should expect LMFs to win the ‘survival game’, and to thrive in a competitive environment. This introduces the dilemma. If workers’ cooperatives are not inefficient, why are there so rare?

IV. The Evolutionary Argument Reconsidered: An Incomplete Conception of Evolution

4.1 Introduction

The previous two chapters resulted in a dilemma. The plausibility of relative efficiency of LMFs, and the empirical evidence of their enduring paucity conflict with the efficiency-inference thesis. If LMFs are relatively efficient, why are there so few of them? The dilemma may be solved couple of ways.

One way would be to firmly establish that LMFs are indeed efficient and indirectly argue for the falsity of the Thesis. If LMFs turn out to actually be more efficient form of economic organization, and if they are indeed rare, it follows that we cannot infer relative efficiency from relative prevalence. Indeed, this would give more reason to belief that the opposite is true. In the previous chapter, I have argued that the position in the literature is not straightforward; strong arguments have been proposed that show why democratic governance may be inefficient, and strong arguments have countered the criticism. The debate withstands today. Because there is no consensus on the issue, and because I am in no position to take the side in the debate, another way must be proposed to solve the dilemma.

In the following two chapters, I argue that the dilemma may be resolved by directly going after the truth of the Thesis. If we cannot infer relative efficiency from relative prevalence, there is no dilemma. How to do this? In this chapter, I scrutinize the evolutionary theory that allegedly supports the Thesis. I argue that we cannot infer the survival rate from prevalence of a trait, because birth is equally important in order to understand the frequency of a trait in a population.¹⁷ In the section 4.2, I argue that the origins of this misconception reside in the adaptationist paradigm. I point to the misconception of the evolutionary argument by the Efficiency Branch. In the section 4.3 I look at some data; organizational demography provides the intuition that we should

¹⁷ Note that already this view of natural selection is not complete. This is not problematic for my claim. Instead, the complex story behind the natural selection makes it even more difficult to infer any causal factor directly from prevalence.

look for the explanation of the paucity of LMFs elsewhere than in their survival rate. this bridges this chapter to the next, where I consider an actual counterargument to the Thesis.

4.2 Two Sides to Natural Selection

If an organizational form exists, this does not in itself imply that it is more efficient. This would be a circular argument of the worst sort, because we would define efficiency by existence (or prevalence). To account for prevalence, it is necessary to specify a mechanism through which an institution is *generated* and *sustained* through time (Ullmann-Margalit, 1978; Dosi, 1995; Hodgson, 1996). The so-called ‘invisible hand hypothesis’ is often invoked in order to explain the *existence*. Alchian’s (1950) evolutionary explanation is one example of the invisible hand leading to the prevalence of profitable firms on competitive markets. It was adopted (and slightly adapted) by the Efficiency Branch. They have done so in a rather careless way; “the operation of alleged selection pressures is [...] neither an object of study nor even a falsifiable proposition but rather an article of faith” (Granovetter, 1985: 503).

The idea that evolution tends to promote efficient (adapted) organisms has its origins in the so called adaptationist programme of the evolutionary biology in the early 19th century. Below I introduce the relevant points of the programme, relate them to the evolutionary idea of the Efficiency Branch, and provide criticism.

4.2.1 Adaptationist Ideas

When we observe that a trait is prevalent in a population, we may turn to Darwinian evolution by natural selection, and look for an explanation of its prevalence. Some of the early attempts to explain the prevalent traits strayed from the way how Darwin understand the evolutionary process, and resulted in an infamous ‘adaptationist programme’. Herbert Spencer was one of the most notorious adherents of the view that we should view every trait as an adapted solution to the environmental demands.¹⁸ Adaptationists consider natural selection as the most important cause of evolution, which

¹⁸ For a good historical overview of the adaptationist programme, see Bachmann and Ruse (2004).

shapes a population continuously towards the state of perfection. They assume that “all aspects of the morphology, physiology, and behaviour of organisms are adaptive optimal solutions to problems” (Lewontin, 1979: 6). Adaptationism does not necessarily deny other evolutionary forces; but the adaptationists nevertheless hold that natural selection, *ceteris absentibus*, yields predictions that are good enough approximations of the evolutionary outcomes that we actually observe (Sober, 1987). Adaptationism is not limited to natural sciences. It lives outside biology also.

Williamson, Alchian, Demsetz, Jensen, Hansmann and few others commit to the evolutionary argument with the adaptationist flavour. They observe the prevalence of the hierarchical mode of economic governance, and take the prevalence to be the evidence of its better adapted. Of course, they do not talk about ‘adaptation’ directly, but employ the economic terminology; the efficiency of an organizational mode represents the degree of its adaptation to the requirements of the competitive environment. They insist that the efficiency is the main, but not the only case in understanding prevalence.¹⁹ The predictions that their framework yields on the basis of efficiency considerations are supposedly good enough approximation of what actually happens. That is, the predictions made in the vacuum (*ceteris paribus*) – relative efficiency is selected for if all the other causal factors relevant for prevalence are absent –, correspond to the phenomena in an open system – despite other factors, efficient structure will eventually prevail as predicted by the framework. It is this proposition that resembles the adaptationist programme, and it is this proposition that allows them to infer relative efficiency from relative prevalence.

The following may illustrate this point. Williamson (1980: 35) maintains that “historical evidence [i.e. enduring paucity] disclose that nonhierarchical modes are mainly of ephemeral duration [i.e. have low survival rate]”; thus assuming that the survival of an organizational form determines the relative prevalence of form. Survival is, in turn, reduced to efficiency; “those organizations *survive* that are able to deliver the activities and products at the lowest price while covering costs [i.e. efficient organizations]”

¹⁹ The fact that other factors are relevant for prevalence is made clear by Williamson on numerous occasions.

(Jensen, 1983: 331). The differential efficiency supposedly drives the evolution of organizational forms. Establishing this proposition, the Efficiency Branch warrants the inference of efficiency from prevalence. The evolutionary argument in support of the Thesis is, however, incomplete.

4.2.2 Problems with Adaptationism

In 1979, Stephen Jay Gould and Richard Lewontin wrote the paper *The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme* and opened a serious contemporary debate on the issue of adaptationism. Many biologists and philosophers preceded but also followed their criticism (see for example Carroll, 2005; Wagner et. al. 2000; West-Eberhard, 2003). While the details of the debate are far beyond the scope of this thesis, it is important to note that many have countered the evolutionary ideas with adaptationist flavour.

Gould and Lewontin took an important task to dispute the idea that evolution can be reduced to the forces of natural selection. Evolution, as emphasized by Darwin himself, is much more than natural selection, and we should not presuppose that the observed trait is the outcome of the gradual adaptation to the requirements of the environment. Pleiotropy, mutation, drift and migration are only few examples of the evolution of a trait without natural selection. More importantly for the purpose here; they have reminded us that natural selection *itself* does not necessarily promote organisms with efficiently adapted traits. For example, if the birth rate of a relatively ill-adapted individual sufficiently exceeds the birth rate of a relatively well-adapted individual, the former will prevail in the population. This point is crucial for the aim of my thesis, and is further elaborated below.

“While transaction cost economics admit to the need for a more fully developed theory of the selection process, it asks that selection arguments be applied symmetrically. If efficiency outcomes are purportedly defeated, what is the selection process by which this defeat is realized?” (Williamson, 1987: 623)

A brief glance to the discussion in the philosophy of biology may help us to address the question posed by Williamson in the passage above. In *The Nature of Selection* (1993), Sober deals extensively with the explanation of prevalence of a trait in a population. He shows that different causal factors contribute to both, differential survival and differential reproduction rate, which *jointly* contribute to differential prevalence of a trait. This makes it very difficult to infer a hypothesized causal factor merely from observing an existing trait. Through mutation, trait X is introduced in the population of individuals with trait Y. We hypothesize that X makes an animal faster, and helps it to escape the predator. Assume that a death from a predator is the only possible cause of dying. Through time, we see that X is spreading relative to Y, until gradually most of the animals are endowed with X. Can we infer higher survival rate (greater speed) from the prevalence of trait X? Even if we neglect the influence of drift, pleiotropy, or other possible causes of evolution outside natural selection, this inference is problematic. Say that X - in addition to its influence, whatever it may be, on the survival rate - doubles the fecundity of the individuals endowed with X. Since natural selection always favours higher birth rate, the mutated trait could prevail in a population despite the neutral or even *detrimental* effect of X on the speed of an animal. We cannot infer survival rate from prevalence, simply because there is an alternative cause of prevalence than differential survival. Because an alternative hypothesis is plausible that would explain the prevalence, the prevalence of X itself does not *validate* our initial hypothesis about the influence of X on the speed of organism.

By analogy to the above, similar concerns arise when considering the evolutionary argument in support of the Thesis. In this section, I have shown that the ideas of the Efficiency Branch roughly correspond to the adaptationist ideals of the early evolutionary biology. These are controversial today. At the very least, we have to consider both the differential survival and differential birth. In the context of the LMF/CMF discussion, empirical data may help us to see where we should look for the explanation of the relative paucity of workers' managed enterprises.

4.3 Some Empirical Qualifications

“The number of LMFs at any point in time [...] depends on past rates of creation and destruction as well as past rates at which KMFs have become LMFs, and vice versa. [...] Understanding these processes is therefore an important objective in explaining why LMFs remain rare.” (Dow, 2003: 207)

With the conclusion from the above in mind, we should consider both survival and birth of an organization. (i) The survival rate serves the analogy for the disappearance of organizational forms *that were already in existence*. The disappearance of an economic enterprise consists of bankruptcy, transfer, and transformation. First, it may die out for the financial reasons. This is usually designated as survival of the firm, and is one of the more reliable indicators of the efficiency of an organizational structure. The second way in which an organizational form may disappear is a degeneration in another form. (ii) The emergence rate serves the analogy for the unequal rate by which capitalist and democratic enterprises are formed. Economic enterprises can be created *de novo*, through novel assemblage of technologies and inputs that were previously not combined. Or it can come in existence with transformation; an existing form may be transformed in a different type of organizational mode when the source of authority, the objectives, or the internal organization are altered (Ben-Ner, 1988).

To start where it all starts; with the question of creation. The creation may occur by the assemblage of technologies and inputs that were not previously employed in the production process together, or by a change in the source of authority, objectives, or internal organization of existing economic enterprise. Transformation means a change in the type of organization by; for example, the change in the control over the decisions of the firm from capital to labour, or *vice versa*. Transformation is the other side of the degeneration coin; for example, a gradual degeneration of LMF through hiring wage-labour (disappearance) is a transformation into a CMF (formation). Thus, we can assume that the same numbers apply to both forms of economic organization: LMFs degenerate in CMFs often, which implies that CMFs are created often through transfer or transformation from LMFs. The reverse is not true. While some LMFs are formed from

unprofitable CMFs, “the majority of [LMFs] in existence were created from scratch” (Bonin et. al. 1993).

The entry of workers’ managed firms to markets has been far below the creation of capital managed firms. Aldrich and Stern (1983) show that throughout the history, the creation of workers managed firms has represented only a small fraction of the total number of economic enterprises that are created. The birth *rate* is increasing - total number of formations divided by the number of enterprises already in existence increased at the end of 20th century, and even overcome the birth *rate* of CMFs (Ben-Ner, 1988). However, the *absolute* discrepancies of birth between LMFs and CMFs remain large. In the past and today, LMFs are much less often created than CMFs (Dow, 2003; Perotin, 2006; Podivinsky and Stewart, 2007; Arando et. al, 2009). Podivinsky and Stewart (2007) find out that on every LMFs that was created in the period between 1976 and 1985, 1000 CMFs were created. The empirical evidence thus indicates that “the creation of new KMFs far outpaces the creation of new LMFs in all years and in all Western economies”, thus labour managed firms “are rare because in absolute numbers they are created much less often than KMFs” (Dow, 2003: 208,227).

Now to the question of destruction. Survival is one form of organizational destruction, but it should not be confused with the survival in biology – the analogy to biological survival is the disappearance of an organizational form, while the disappearance is further narrowed down to survival and degeneration. Survival is related to financial failure, and higher survival usually implies higher efficiency. For this reason, it is important to see what empirical data about survival rates is telling us. What evidence is available about survival of labour managed firms suggests that they have higher survival than capital managed firms (Bonin et. al. 1993; Ben-Ner, 1988; Staber, 1993; Perotin, 1997; Dow, 2003 Zanotti, 2012). The self-managed enterprises within the Mondragon group, for example, have excellent survival record with practically no demise (Whyte and Whyte, 1989). Long-established LMFs have usually much greater survival than comparable CMFs (Bonin et. al., 1993), while this also applies to the young LMFs (Cornforth, 1983). Dow

(2003: 227) concludes that “LMFs are not rare because they fail disproportionately often. Once created, they appear robust”.

Once existent, firm may also ‘degenerate’ into another type. This may happen in two distinct ways. First is transformation. This is relevant especially for LMFs, which, by hiring wage-labourers often transform into CMFs. Empirical evidence (Ben-Ner, 1988, 1988b) shows that LMFs often degenerate into CMFs, while CMFs are bought out by the employees “occasionally [...], but infrequently and only under special conditions” (Dow, 2003: 213). The transformation of LMFs into CMFs was found to be significant especially in taxi-driving cooperatives, plywood cooperatives, and barrel-making cooperatives (Bonin et. al., 1993). Overall, LMFs more often degenerate into CMFs than vice versa (Ben-Ner, 1988, 1988b; Bonin et. al., 1993; Dow, 2003).

In conclusion, financial failures most probably reflect the technological efficiency of organizational forms, while with degeneration this is not necessarily so. The data suggests that LMFs have higher survival rates, while they are more often degenerated into CMFs. In addition to this, CMFs are more often created from the scratch. Because ‘degeneration of LMFs’ is just another way of saying ‘transformation in CMFs’, the above leaves us with the following empirical proposition: CMFs are more often formed than LMFs, while the financial survival seem to be about the same between the two forms of enterprise. Thus, to explain the differential prevalence, we should be able to explain the differential formation between LMFs and CMFs.

4.4 Conclusion

In order to defend the Thesis, the Efficiency Branch must make the following steps: they have to show that the relative prevalence indicates the difference in destruction (bankruptcy and degeneration) among the organizational forms, that the difference in destruction indicates the differential in survival (bankruptcy), and that the differential survival indicates the relative efficiency of an organizational form.

The response to the adaptationist programme by biologist and philosophers makes clear that we should be careful in inferring the adaptation of a trait from its frequency in a

population. By analogy it follows that we should be careful in inferring the relative inefficiency of LMFs from the rarity of LMFs. A look at the empirical data reveals a complicated story behind the organizational demography, and suggests that we should look for the explanation in the differential formation rates.

V. An Attempt to Solve the Dilemma: Is Differential Formation Independent of Efficiency?

5.1 Introduction

The last section above concludes that the differential formation is important factor of the differential prevalence between LMFs and CMFs. Thus, before we may claim to infer anything from the paucity of LMFs, we should be able to provide a hypothesis that explains higher formation of CMFs (*i.e.* lower formation of LMFs).

One possibility is that the modes of economic governance that are formed more often, are also relatively more efficient. If this is true, we can infer relative efficiency from the differential emergence of organizational forms, and so possibly also from the differential prevalence. Williamson introduces an intentional explanation; he proposes that more commonly created organizational forms are also more efficient. While this remains unclear, there are two possible ways to argue for this. Firstly, Williamson may propose that individuals weight the costs and benefits of the viable organizational modes, and decide for the one with highest net (*i.e.* the more efficient form). The assumption here is that the opportunist individuals expect that more efficient organizational form also benefits them best. Another possibility is that opportunist individuals rather seek for more beneficial contractual relationships. The assumption here is that such contracts will always result in more efficient organizational forms. Both explanations would lead to the higher emergence of the relatively more efficient organizational form; CMFs are formed more often because they are more efficient.

In the section 5.2 I introduce the hypothesis of intentional design of efficient forms. In this section, I consider the first option above; individuals recognize which organizational form is more efficient, and enter the contractual relationships under this form of governance. I argue that boundedly rational individuals have problems in infallibly recognizing relative efficiency of organizations. In the section 5.3, I reply to the possibility that voluntary contracting – search for more beneficial contracts – yields more efficient organizational forms. I argue that the appropriability hypothesis undermines this possibility; CMFs are more often formed because they make possible easier appropriation

of benefits to specific groups of agents. I argue that the appropriability hypothesis provides a plausible explanation of low emergence of LMFs.

5.2 Formation of Efficient Forms: Intentional Design

Alchian's (1950) evolutionary argument opposes the ability for a visible hand to promote profitable firms in the circumstances of uncertainty. Alchian mentions that failed imitation of past success can result in efficiency improvements, however his account of evolution on competitive markets does not rely on the deliberation of agents to find more efficient firms. Independently of whether businessmen will behave so to seek for efficient solutions or not, natural selection selects for more efficient firms.

In most cases, the adherents of the Efficiency rely relies on the efficacy of market forces to promote more efficient forms of economic enterprise. At time, however, some scholars supplement the 'invisible hand' explanation of the organizational demography with the intentional explanation; they recognize the role of sub-rational deliberation in forming organizational modes. For example, Jensen and Meckling (1979: 473, my emphasis) argue that "the fact that [the workers' controlled enterprise] *seldom arises* out of voluntary arrangements among individuals strongly suggests that co-determination or industrial democracy is less efficient than the alternatives which grow up and survive in a competitive environment" and clearly take the emergence of firms as important; what is more, they suggest that the emergence should be explained in terms of efficiency. Williamson (1975, 1981: 574, 1986, 1987, 1991) argues that the intentional explanation helps to explain how efficient organizations arise. The complete argument promoted by Williamson would in this case be that efficient forms evolve, that is, gradually prevail in a population, because (i) efficient organizational forms are introduced in the population by individuals who are "*intendedly* rational, but only *limitedly so*" (Williamson, 1987: 618, original emphasis), and (ii) they are selected for on competitive markets.

Governance structures are conceived as implicit or explicit contractual relationships (Williamson, 1979); the choice for relatively efficient governance structure by opportunist individuals results in preferable contractual relationship, or the more beneficial contractual relationship manifests in relative efficient enterprise. Williamson

(1975, 1985) remains unclear about what is actually the case. The first implies that agents weight the benefits and costs of each organizational mode, and choose for the one with highest net benefit, assuming that it will also best serve their individual interests. The second implies that the opportunist agents enter the more beneficial contractual relationships, which necessarily lead to more efficient organizational modes. In this section, I discuss the first explanation.

“The ultimate choice of governance structures requires balancing the costs and benefits of these alternative governance systems” (Joskow, 1991: 125). There are *ex ante* and *ex post* costs characteristic of each form of economic governance that individuals recognize before the contractual process. The gross benefit of an organizational structure is the value to the contractual men, who choose the organizational structure with greater net benefit (Williamson, 1985: 20). Governance structures are chosen on the basis of their relative efficiency. Thus, the differences in formation rates of organizational forms – novel creation and transformation - can be explained by boundedly rational individuals recognizing the relative efficiency of each form.

Dow (1987) argues that the explanation along these lines collides with the assumption of bounded rationality and the uncertainty of the business environment (which is the very reason why Alchian, but also Williamson on other occasions, focused on the ‘invisible-hand explanation’). “If agents cannot cope with contracts featuring complex contingencies [...], it is doubtful that they can select in advance an efficient decision making procedure to use in adapting to future circumstances” (*ibid.*: 23). Williamson (1987) responded to this criticism. He wrote that his definition of bounded rationality is in place in order to understand that complete contracting is infeasible. The *absence* of perfect rationality does not imply that there is *no* intentional design. *Ex ante* planning gives rise to *ex post* governance, which is necessary in order to economize on the costs that arise from bounded rationality (Williamson, 1981, 1987). Out of the fact that contractual man is not perfectly rational arises the organizational structure that better economizes on his decision making.

How individuals *actually* decide upon what organizational structure better economizes on their bounded rationality and safeguards against their opportunism remains largely unexplained. One way to find about the efficiency of an organizational structure is to employ insights from organizational theory - books like Williamson's. While this might sound unconvincing, it is actually not very implausible. Many of the agents that enter a contractual relationship had, most probably, at some point in their life, attended a course on organizational theory. If not, they might consult a book on the topic. Doing so, they would most probably learn that hierarchical modes are more efficient than workers' controlled firm and would, when it comes to it, choose the hierarchical form. But in this case they would have chosen the hierarchical enterprise not because it is *actually* more efficient, but because they have *learnt* about it being more efficient. Plausible or not, this explanation does not help Williamson. If the differential emergence of organizational forms could be explained by agents employing Williamson's hypotheses in their business practice, the higher emergence would not prove the theory. A hypothesis about the superior efficiency of capitalist enterprise would lead to, or rather *create* the higher emergence of the enterprise, and so prevent Williamson to take higher emergence as the evidence for his hypothesis. In this case, the theory would serve the function of '*an engine, not a camera*', as the title of MacKenzie's (2008) book on the performative powers of economic theory suggests.

Another suggestion is that the agents simply look at the records in order to decide for a particular contractual relationship. Hierarchical governance consistently prevails over the workers' controlled firms, which, allegedly implies that it is more efficient. The idea that agents choose an organizational form because it is more prevalent is not dubious either. Many have argued that agents adjust their preferences in favour of the capitalist enterprise because of the mere familiarity with this form of economic enterprise (Damachi and Seibel, 1982; Gamson and Levin, 1984; Elster, 1989; Doucouliagos, 1990; George, 1997; Schwartz, 2012). The 'familiarity principle' implies that preferences can be reinforced and even acquired by a repeated exposure to stimuli (Zajonc, 2001). It may help to explain reluctance - especially of workers - to join labour managed firm, which

enduring paucity makes it a rather marginal phenomenon. This has some empirical support. In his extensive empirical study of American plywood cooperatives, Roeber's (1974) found out that at first adverse workers had re-adapted their preferences through experience of working for a cooperative.

This would imply that CMFs enjoy higher formation rates simply because there are more of them in existence. Such explanation obviously begs the question; it assumes that prevalence indicates efficiency, while Williamson is actually trying to *explain* why prevalence indicates efficiency. He is trying to explain differential formation of organizational forms with the deliberate choice of the more efficient structures, but would have to assume that the prevalent organizational structure is the more efficient organizational structure. With the intentional explanation, Williamson tries to provide the complete picture of the prevalence, and correctly introduces emergence as an important factor. But if the above is true, the emergence would be explained with the prevalence, and this would reintroduce the initial question: Does selection on the markets eliminate the inefficient, and promote the efficient forms? This explanation brings back the evolutionary hypothesis; ultimately, the efficacy of the selection on competitive markets guarantees prevalence of efficient forms.

Williamson actually capitulates to this conclusion. He insists that "the New Science of Organization [...] implicates both spontaneous and intentional mechanisms", but he admits that "spontaneous governance carries the day" (Williamson. 1991b: 160-1). Information impediments, constraints on rationality, and complexity of the environment - some of the core pillars of the New Institutional Economics framework - do not allow individuals to infallibly predict what organizational structure will yield higher quasi-rents. Despite Williamson's attempt to give more weight to intentionality, his framework does not ensure that agents actually manage to design superior forms reliably. Market selection is the 'ultimate decider' about what form is efficient and which one is not. Or in the words of Williamson: "[The] transaction cost approach relies – in a somewhat informal, background, and long -run way – on the operation of natural selection [to

promote] governance structures that have better transaction cost economizing [and eliminate] those that have worse.” (Williamson, 1981: 574).

In this section, I have considered why boundedly rational deliberation about the creation of efficient organizational structures does not imply that efficient organizational structures are *actually* created. In their choice of organizational modes, individuals need some kind of a benchmark; be it organizational theory, the records of success of different forms of organization, or some other unexplored possibility. Thus, the higher formation is not evidence of higher efficiency. As mentioned earlier, there is another possibility. Do agents actually seek for more efficient organizational structure, or are they rather looking for a contractual relationship that best serves their individual interests? Does the second lead to the first? The appropriation hypothesis plays crucial role in addressing this question.

5.3 Formation of Inefficient Forms: Appropriation Hypothesis

In this section, I argue that CMFs enjoy high formation rates because it enables opportunist behaviour to certain powerful groups with vested interests in a capitalist enterprise. This explanation conflicts with Williamson’s intentional explanation, which states that A CMF is the choice of opportunist individuals who wish to avoid bearing the opportunity costs related to the choice of inefficient democratic economic governance. This hypothesis, like the one above, explains highest formation of CMFs with their superior efficiency. The appropriation hypothesis counters this logic. Discussing the issue of the firm formation, Ben-Ner (1988b: 289) argues that “strategic collections of self-interested individuals [...] design and redesign their organizations to best meet their interests”. His framework also makes the assumption that self-interested individuals enter contractual relationships that best serve their interests, but Ben-Ner, in contrast with Williamson, argues that this does not necessarily bring about most efficient organizational structure! This is a crucial element to the hypothesis that I will introduce in this section.

Ben-Ner shows that efficient structures may have higher formation rates, but *only as long* as efficiency is “defined relative to members’ goals” (1988b:298). Here, the term

'members' is intended for those in power of the enterprise. The benefits of an organizational structure – the 'personalized efficiency' – flows, at least proximately, to those in control. Thus, control in itself is desirable (Marglin, 1974). CMFs make possible the appropriation of higher benefits by specific interest groups, which prefer CMFs *independent of their technological efficiency*. "The nexus between efficiency and selection forces is broken by appropriation obstacles" (Dow, 1987: 33).

"Assume for the sake of the argument that, compared with a capitalist firm [...], an ongoing [LMF] yields large [efficiency benefits], perhaps because it adapts more easily to changing circumstances. Assume also that the governance benefits of any structure, LMF or CMF, flow at least proximately to the agents who wield managerial authority within that structure. Then the governance benefits of the LMF will inevitably be diffuse, flowing in some measure to each worker in the firm, because labor services are unavoidably attached to separate legal persons and cannot be concentrated in the hands of a single economic agent. However, the (smaller) benefits from control by capital can be concentrated quite easily in the hands of a single agent, by bringing all physical capital under an umbrella of common ownership." (Dow, 1987: 23)

The excerpt above indicates that the control over the firm implies easier appropriation of the benefits it yields. If the control is concentrated in the hands of management and capital owners, they may appropriate higher benefits from potentially smaller pool. In the literature, the appropriation hypothesis has often been employed to explain prevalence of the capitalist enterprise (*i.e.* the paucity of democratic enterprise) (Marglin, 1974, 1984; Bowles and Gintis, 1976; Putterman, 1982; Horvat, 1982; Ben-Ner, 1988; Dow, 1993, 2003). The appropriation hypothesis helps to explain the difference in creation on two levels. The hypothesis (i) provides a plausible explanation of why CMFs are created more frequently from the scratch, and (ii) suggests why LMFs often degenerate into CFMs. The upshot is that higher individual benefits may be appropriated by certain groups of agents in CMFs, independent of its relative efficiency. The opportunist

tendencies of these groups may thus be partially responsible for the higher formation of capitalist enterprise.

5.3.1 Novel Creation: Access to Finance and Labour

“The formation of a new firm requires *premeditation and planning by entrepreneurs*, the assumption of the risk of losses, *the provision of capital*, and the bearing of set-up costs.” (Ben-Ner, 1988b: 289, my emphasis)

In this section, I focus on the limited supply of start-up capital and highly skilled labour for LMFs. Labour and capital are two factors of production that are necessary for the birth of an economic enterprise (Ben-Ner, 1988b; Dow, 2003). I argue that the appropriation hypothesis provides a plausible explanation why each is in shortage for a self-managed enterprise, but not for a capital managed firm.

“What must happen in order for an LMF to be created? Most obviously, a number of labor suppliers who agree on the merits of a common project must be assembled” (Dow, 2003: 208). Labour is a necessary condition for production, and as such conditions the emergence on an economic enterprise. Alfred Marshall (2009: 65) defines labour as any “exertion of mind or body undergone partly or wholly with a view to earning some good other than the pleasure derived directly from work”. Labour is a diverse category; manual labourers, engineers, managers, and other profiles of labourers exist. Labourer is inalienable from the labourer, who cannot be (legally) bought or sold; she lends her labour for a given remuneration specified under a contract. In order to start a capitalist enterprise, the investor hires workers to produce, managers to control, and different professionals to coordinate the business activity, improve the technical aspects of production, or search for new markets to enter. In a workers’ managed firm different profiles of labourers self-organize on the democratic and more egalitarian basis; a LMF coalition consists of different profiles of labourers who cooperate to establish a self-managed enterprise.

5.3.1.1 Problems with Start-Up Capital

“Access to finance is crucial to firm formation” (Dow, 2003: 236); in the literature, the area of finance has been recognized as one of the most promising places to search for the explanation of low novel creation of labour managed firms (Bonin et. al., 1993; Bowles and Gintis, 1994, 1996; Putterman, 2006; Dow and Putterman, 2000; Dreze, 1993; Dow, 2003). I show that debt and equity finance may help to explain differential novel creation between CMFs and LMFs. The rent-appropriability hypothesis helps to explain problems with equity finance.

Capital is alienable, which means that in order to create a capitalist enterprise, wealthy investors may simply pool their funds together and acquire part of the physical assets and financial capital necessary for production. LMFs do not have this option. Workers face limited wealth and liquidity constraints (Bowles and Gintis, 1996: 95) and are generally averse to risks; they prefer small wages with lower variance to higher wages with higher variance (Ben-Ner, 1988b). Whatever financial capital workers may possess, uncertainty of business makes workers reluctant to invest all their eggs in the same basket. Forming a LMF, however, forces them to invest their human capital, equity capital, and employment in a single business entity. This are the more important reasons why workers are reluctant to invest their own assets in starting a LMF (Ben-Ner, 1998b; Putterman, 1993; Dow and Putterman, 2000; Dow, 2003: 193; Groot and Linde, 2015). There are roughly three ways in which they can access external capital in order to form a LMF - leasing, debt finance, and equity finance.

I first sum-up the main problems with leasing, and conclude that it is not responsible for differential birth of the two forms of enterprise. Leasing assets is one way of raising the capital to start a production process. An operating lease (in contrast to capital lease) is a contract that allows the use of the asset without the transfer of ownership of the asset. Many scholars have argued that leasing may incur additional costs on a business enterprise. The general conclusion in the literature is that the depreciation on a physical capital is likely to be greater in the cases where a large part of assets is leased (Alchian

and Demsetz, 1972; Holmstrom and Milgrom, 1991).²⁰ A second argument against leasing comes from the transaction costs literature. Williamson argues that leasing assets may be inefficient because of the opportunity costs. Investments in the specialized assets can lead to productivity benefits that leasing does not allow. Leasing can only be efficient when assets are deployable to the uses in different production processes, however efficient production usually requires some portion of specialized assets. The problem arises when asset-specific assets are leased; boundedly rational individuals cannot specify the use of asset completely in their contracts, which leads to *ex post* bargaining over the quasi-rents that arise from the use of assets. The bargaining incurs either costs in establishing safeguards *ex ante*, or resolving the conflicts *ex posts* (Williamson, 1975, 1985; Kennan and Wilson, 1993).

It was recognized in the literature that a production within an economic enterprise requires at least partial ownership of the assets. Gintis (1989: 158) argues that “the necessity of external finance is reflected in the fact that virtually all firms are financed through equity, bonds and bank credit markets”. Leasing cannot explain differential emergence of LMFs and CMFs, because organizational forms encounter the problems introduced above; both forms have to establish at least partial ownership over the assets of the enterprise. The reasons for unequal access to financial capital should be sought elsewhere. I show below that access to both, debt finance and equity finance, is discriminating against LMFs, and in favour of CMFs.

Next is debt finance. As I show below, debt financing is problematic especially for LMFs, because workers are usually not able to provide sufficient collateral and cannot signal reliably the safety of the investment. The problems in access to debt finance may thus explain lower novel emergence of LMFs. Debt finance is, simply, raising working capital or capital expenditure by selling bonds or notes. In return for lending the money, the creditors receive promise (usually contractual) that the interests in addition to the debt

²⁰ The extension of the argument is that some assets should be owned by an investor, who imposes control over the asset use. Dow (2003) questions the validity of such conclusion and concludes that collective ownership of the assets can at least as efficiently resolve the problems of assets misuse. I have considered the reasons for this in the previous chapter.

will be repaid in ex ante specified time window. I argue that moral hazard and adverse selection incur external costs on debt-financing LMFs; because workers do not have sufficient collateral, the interests on the financial capital are usually higher for LMFs.

A number of issues enter with debt financing of workers' controlled enterprise. Because assets are generally taken as the collateral for the debt-issuers, the low initial endowments of workers often prevent debt financing. Even if workers are in principle able to repay the debt through which they would have financed the firm, lenders may be unwilling to provide the capital because of the insufficient worker's collateral and/or uncertainty about the commitment of individual workers to the firm (Hart and Moore, 1994; Dow and Putterman, 2000). Borrowing from the third party with low collateral leads to a moral hazard - workers may simply leave the LMF when faced with problems, thus leaving the lenders incompletely compensated. Gui (1995) showed that there exists a debt to equity ratio that limits the amount of debt financing when workers do not dispose with enough of their personal assets. The conflicts between borrower and lender intensify when the debt to equity ratio grows, which results in more expensive financing (price of the capital) for workers' managed firms or more stringent credit conditions (Stiglitz and Weiss, 1981). The second form of moral hazard implies that workers seek for riskier projects, because of greater potential payoffs, whereof the high risks associated with the risky investments are inflicted mainly on the lender. The issue of moral hazard indicates that asset owners will prefer to invest in the capitalist governed corporation, where they have greater influence over the decisions of the firm.

Another major problem with debt financing is adverse selection. The argument is built on information asymmetry. The issue is that lenders cannot distinguish ex ante between the safe and risky borrowers, and so between the good and bad investment. While it is difficult to signal the skills and quality of projects to the lenders, it is not impossible. Credible workers-borrowers may invest some of their own funds to convey their confidence about the project (Dow, 2003). This solution may face other problems. It is inefficient in that signalling is costly. Next, signalling credibility is often conditioned with

wealth as collateral, which, again, is not in favour of workers who are trying to set up a cooperative. In these cases, assets are taken as a collateral to overcome these issue.

Dow (2003) argues that debt financing is less accessible to LMFs for the problems of moral hazard and adverse selection; borrowers usually demand higher interests or are simply unwilling to provide debt capital, because of low equity/debt ratios. It is worth mentioning that neither moral hazard nor adverse selection arise because of technological inefficiencies of workers' managed firms. However, upon a suitable definition of *efficiency*, one could argue that the higher costs of financing make LMF a inefficient organizational form. But he would then have to show that the costs outweigh the benefits of potential superior technological efficiency, and possibly quantify the qualitative benefits of LMFs such as democratic governance, improved working conditions and workers' satisfaction, safer employment etc.

Finally, there is equity capital. Equity financing is raising capital by selling shares of an enterprise. Workers could finance their enterprises by selling non-voting equity shares. The non-voting stocks provide the shareholder very little, or if we are strict with our definition of a LMF - no vote on corporate matters. Investors buy a share of the company and profit from its increase in value (or loose from its decrease in value). In this way, workers could attract the capital and reallocate the risk without the need to sacrifice control rights over the decision of a firm (Dow, 2003). The empirical data indicates that "there are few documented cases in which workers' cooperatives have used non-voting equity" (Dow, 2003: 248; see also Bonin et. al, 1993). One possible reason may be that non-voting equity is inaccessible due to moral hazard and opportunism. The appropriation hypothesis falls under the moral hazard problem; once non-voting equity is invested in a LMF, investors have no influence over the distribution of revenue stream by the workers, and so no influence on the expected remuneration. I argue that rent-appropriability hypothesis provides a plausible explanation of the limited access to equity finance.

The efficiency of an economic enterprise is not conditioned by the control in the hands of capital providers (Putterman, 1988). The equity holders within an enterprise with

largely diffuse equity holdings usually do not have any real interests to participate in the decision making, because their shares are often small, and stakes relatively insignificant, while their ability to participate in the decision making is small. The position in the literature is that shareholders do not require to exercise control in the firm for the firm to be efficiently governed. Non-voting equity is thus an alternative that would not radically change the way economic organizations are conventionally governed. However, equity finance is nevertheless less accessible for LMFs because there is a hazard that workers will not abide to the greatest interests of the shareholders, as managers do in a capitalist enterprise. Workers may manipulate the residual so to benefit themselves and not the owners of the non-voting shares. The rent-appropriability hypothesis falls under the moral-hazard problem:

"Once investors have turned their funds over to the firm, there is no reason why dividends would ever be paid, apart from the firm's concern for its reputation or its need for further capital later. By contrast with leasing or debt, there is no designated asset that investors could extract from the firm in the event of non-payment, and they would have minimal legal recourse if the LMF paid high wages or inflated costs in other ways" (Dow, 2003: 238).

While I think that Dow underrates the worth of reputation - workers cannot afford to lose a reliable source of finance that allows their autonomy in the decision making, and would probably try to maintain their reputation by regularly paying the dividends - the excerpt suggests that we can roughly classify the appropriation hypothesis under the problem of moral hazard. Non-voting equity owners have no control over the decision process within a LMF, and so no control over the distribution of the revenue stream. Dividends may be substantially lowered by workers, who may rather invest into high wages, good working conditions, and other perks that benefit themselves, but lower the benefits of the investors.

One of the main reasons why the access of LMFs to equity finance is limited is that interests of the investors are better served in a capital managed enterprise than in a self-managed firm. What the 'bosses' (capital owners) actually do, according to Stephen

Marglin, is (i) to find the function in the production process that they otherwise lack, and to (ii) *distribute and appropriate larger share of the revenue stream that a capitalist would under the workers' control of an economic enterprise*. Marglin (1974, 1984) argued that participation may increase the productivity of an economic enterprise, but that the higher control of workers in such enterprise implies that investors will be able to appropriate less fruits of the technological efficiency improvements. The residual appropriated by the owners of the capital – owners of equity capital – can be larger in potentially less efficient firm, if investors have the control over the distribution of the revenue streams. In the open corporation, owners appropriately incentivize managers to 'increase' their remuneration by other means than increasing technological efficiency: reduce wages, outsource low-skilled labour, automatize production and substitute less skilled workers, intensify the discipline with more intrusive inspection etc. While this does not improve the efficiency of an enterprise, it may increase the remuneration of the investors. In workers' controlled firms, on the contrary, the revenue streams may either be redistributed more equally, or employed in a way that benefits workers.

This argument has been pursued in a more contemporary literature. Dow (2003) provides an example of how rent-appropriability hypothesis prevents the creation of LMFs. Consider a noncontractible relationship-specific investment that is necessary in order to start the production process. The necessary investment is not redeployable to the alternative use, making leasing infeasible. Say that workers are unable to raise the capital from personal savings, or simply unwilling to do so because of their risk aversion. Assume further that debt finance is denied, or rather costly. The only way to finance the production is equity finance. The investors should accept the non-voting equity share for their financial contribution, which should not be a problem – participation in decision making is neither an efficiency requirement nor does it condition investors' willingness to buy equity in open corporations. Why would in this case a capital managed firm attract equity finance, while labour managed firm would not, even if the projects are exactly the same? The reason is that capital managed firms "are an attractive vehicle for the appropriation of entrepreneurial rents, while LMFs are not" (Dow, 2003: 210). The

argument is, again, that the rents are much more easily appropriable in CMFs, where the ultimate control right resides on owners of the capital. The investors will not be willing to invest their resources in workers' controlled firms, because the *ex post* distribution of quasi-rents cannot be known prior to the investment and cannot be specified in the incomplete contracts. Workers, in their right to control over the residual, will probably withhold greater share of the revenues and leave less for the investors. Therefore, LMFs as "organizations in which *ex ante* participation constraint is violated will not flourish in the long run regardless of their potential *ex post* productivity" (Dow, 1993a: 119).²¹

The appropriability hypothesis ultimately depends on the values that investors hold. Assuming, quite reasonably, that the pecuniary interests prevail over the democratic values, we can conclude that investors will not be interested in buying non-voting equities in order to provide start-up capital to workers when a viable alternative investment in a CMF is available. The empirical data supports this hypothesis (Ben-Ner, 1988b; Bonin, Jones and Putterman, 1993; Dow; 2003). I follow Bonin, Jones, and Putterman (1993: 1316) in their conclusion that "the weight of theoretical reasoning and [empirical] evidence convinces us that the explanation of the relative scarcity of [LMFs] lies in the nexus between decision making and financial support." The rent appropriation hypothesis is an important explanation of the low novel creation of LMFs. It could be remedied if workers would give away some of the voting equity capital in order to reassure non-voting equity investors. But this, on our definition of the LMF, would transform it into the capitalist enterprise.

In conclusion, problems with debt and equity finance may contribute to the lower emergence of LMFs. I have focused on the appropriability hypothesis, which suggests that CMFs will more commonly emerge because they provide more benefits to those in power – in this case; equity suppliers. This explanation of the formation rate is independent of

²¹ See Olson (1965), Ben-Ner (1988b) and Rosenberg and Birdzell (1986) for their version of the appropriability argument. They point out that despite the potential efficiency gains of workers' cooperatives, investor-managed firms are more likely to attract the start-up capital because of easier appropriability of rents. Rosenberg and Birdzell (1986: 316) conclude that one might expect more CMFs because far more of them are likely to be born, and that more are born because the rent is more readily appropriable.

the efficiency of an organizational structure (Marglin, 1974; Dow, 1993, 2003; Bonin et. al. 1993; Ben-Ner, 1988b). Marglin (1974: 64, my emphasis) concludes that “a “method of production does not have to be [more efficient] to be adopted; innovation depends as much on economic and social institutions”.

The appropriation hypothesis, however, is not limited to the issue of raising a start-up capital. It can also explain the limited supply of managerial and high-skill labour, which is often reluctant to form LMF coalitions.

5.3.1.2 Reluctance of Managerial and High-Skill Labour

Access to different profiles of labour are necessary for novel creation of the democratic enterprise. In addition to manual and low-skilled workers, a LMF coalition requires businessmen with the entrepreneurial ideas and knowledge of business environment, but also legal theorists with the knowledge of law, economists with the familiarity with business ethics and economic theory, engineers with the insight into latest technology, and possibly others. In the absence of managerial and highly-skilled workers the creation of LMFs becomes very costly and potentially not viable. The reason is that in today's highly specialized and technologically advanced economy, manual and low-skilled workers often lack the necessary skills, and diverse profile of labour is necessary within the LMF coalition in order to efficiently deal with the aforementioned areas of business. Mixed coalitions are necessary for novel creation of LMFs (Margin, 1974; Ben-Ner, 1988; George, 1997).

Managers and other professionals are mostly reluctant to form LMF coalitions. I argue that the appropriation hypothesis provides a viable explanation why “self-interested [professionals] will not choose to establish a worker-owned firm and share entrepreneurial profits with others, if the establishment of a capitalist firm is a viable alternative.” (Ben-Ner, 1988b: 290). Highly-skilled - and thus usually highly payed - labour is disincentivized to form LMF coalitions because they benefit more from the employment in a capitalist enterprise, independent of its efficiency.

Marglin (1974) argues that managers are likely to favour the employment in capitalist firms because they can appropriate larger share of the pie in a CMF. In a capitalist enterprise, managers receive the control rights and authority from the absentee owners. Owners appropriately incentivize managers in order to make unpopular decisions, which increase profits – and so dividends -, but do not necessarily lead to higher technological efficiency of the enterprise; for those in control (capitalists and managers), the situation is often a win-win situation. Fiat might be exploited to increase the residual by decreasing wages, imposing higher production quotas, neglecting health issues, lowering the employment etc.

In the workers-managed firms, managers face two-dimensional loss; higher wages and higher status are more easily appropriated in CMFs. The first reason why managers are largely reluctant to form LMF coalitions because their remuneration decreases substantially. Wage differentials are usually set to a maximum ratio, which decisively limits the managerial pay. Wage differentials are usually around 3:1, in biggest and labour-wise more diverse corporations this ratio raises. For example, in Mondragon group, this ratio is 6:1 (Morris, 1992). In capitalist enterprises, these numbers raise up to 500:1 (source: PayScale). In addition to loss of income, managers also lose professional and social status by working in LMFs. There are two sides to managerial status in CMFs. First is the status on the workplace; workers' managed enterprise largely undermines the traditional authoritative function of managers and "dramatically alters the role and status of professional managers" (George, 1997). True, management is given control rights in order to efficiently govern the enterprise, but LMFs usually establish supervisory committees made up of worker representatives to control for the abuse of power (Horvat, 1982). Managers are directly responsible to workers, and cannot make opportunist decisions that would benefit them individually, but harm the workers. If they do, they are promptly removed. Managers become agents of the workers, which undermines the traditional class distinction and takes away their status within the workplace. Second is the status outside the workplace. As was suggested above, the wages of professionals in CMFs skyrocket relative to manual workers' wages, and allow

the former high ceremonial standard of living. In addition to the fact that managers can afford less 'things', they can afford less 'status'. Social status is a positional good that can be built through - what Veblen (1899) called - 'conspicuous consumption'. Conspicuous consumption relates to spending money on luxury goods and services, of which the 'unserviceability' functions to signal wealth and economic power. Often, signalling and economic power are valued in itself, and not for the instrumental functions. Thus, LMFs decrease the material and the ceremonial standard of living.

Marglin's early account of the rent-appropriability hypothesis focuses on managers and investors, but the same applies to other professionals. Highly paid labourers are disincentivized to join LMFS because the low-wage differentials affect them in a similar way they affect managers. So long as they are primarily motivated by the pecuniary rewards and status, which they derive from position in the workplace and acquired wealth, they will prefer to join CMFs. One example of highly-skilled labour being reluctant to join a LMF coalition was when the Mondragon group established its own cooperative hospital. The cooperative hospital had difficulties forming coalitions with doctors that would be willing to adjust to the wage-differential ceilings (Gilman, 1983). This changes, however, if they regard the democratic ideals high enough for this to outweigh the lower wages.

Low-skilled workers have most to benefit by becoming members of LMFs. But it is also true that they may perceive high opportunity costs in forming LMF coalitions. This, however, does not imply that there *actually* are such costs. Costs may arise if manual workers are expected to get familiar with the necessary institutional and technological requirements. But this should not be expected from them; different profiles of labour should form LMF coalitions and each should have a role that is suitable to his or her profession. The problem is that these highly-skilled labourers are often reluctant to involve in a novel creation of a LMF, or even join an existing LMF. One could push the argument and claim that some opportunity costs remain for the workers; regardless of whether the coalition consists of diverse profiles of labour, setting up an economic enterprise requires time that could be productively employed for wages in CMFs. While

there may actually be immediate costs for the delayed wages by workers – and while this may actually play a role in their decision not to start a LMF -, this does not imply that the formation of LMFs actually incurs net costs (inefficiencies) on workers. Costs are compensated with the benefits for workers as the members of LMFs (Ben-Ner, 1988).

In conclusion, how to explain the empirical fact that CMFs are created much more often than LMFs? There are different factors that are relevant in addressing the issue of firm formation. Finance and labour are among them. In the previous subsection, I have argued that equity finance is in limited supply for LMFs because investors will always prefer the investment in a CMF for a similar project as long as they will appropriate higher rents. Next, I have argued that supply of professional labour is necessary for the emergence of LMFs, because the contemporary business environment demands specialized knowledge that low-skilled workers usually lack. The appropriability hypothesis helps to explain the reluctance of highly-skilled labour to form LMF coalitions – the capitalist enterprise enables them higher wealth and status. In neither case does the technological efficiency condition the novel creation of an organizational form.

5.3.2 Transformation: Members' Opportunism

Beatrice Potter (1890) long ago asserted that workers' managed firms, once in existence, would inevitably degenerate by putting on restrictions to membership and by hiring wage-labour instead of new members of the cooperative. Until today, this remains a widely discussed issue. Indeed, empirical evidence suggests that LMFs frequently transform into CMFs. Degeneration is an important factor of the organizational demise, and is relevant in our exploration of the populational demography.

Again, I turn to the appropriability hypothesis to search for a plausible explanation of the degeneration of LMFs into CMFs. The hypothesis suggests that in pursuit of the expected fruits of future success of a LMF, members of the cooperative hire wage-workers, or replace retired members with wage-workers instead of hiring new members. Doing so, they secure higher share of the residual, which otherwise they would have to divide among new members. I argue that the possibility to hire wage-workers in combination

with their opportunist tendencies provides a possible explanation of the degeneration of LMFs into CMFs.

I have defined a worker-owned firm as an organization in which the ultimate right to decision-making rests primarily in the hands of the workers. The workers that have control rights in a LMF, are *members* of the LMF. They can hire new members of the cooperative, or wage-labourers without control rights. Members, like owners of the capitalist enterprise, share profits and losses of the enterprise, whereas hired workers only receive fixed wages and are not entitled to the residual. If the firm is expected to be successful in the future, the members face the following dilemma; they may subordinate the democratic ideal on which the LMF was formed and hire wage-workers, or they may suppress their opportunism and hire new members. If the opportunism prevails, existing members will hire wage-workers when LMF is efficient, and when they expect the continuation of its profitability. If the enterprise is inefficient, and members expect the continuation of bad business results, they will prefer to hire new members and share the burden of losses.

“Transformation into a capitalist firm may occur in a profitable worker-owned firm when members expect further gains from changing the organization’s principles of internal organization, even at the cost of potential losses in efficiency.” (Ben-Ner, 1988b: 298)

Ben-Ner (1988b) develops a comprehensive theoretical framework that studies life-cycles of labour-managed firms. Members of a LMF have, at any point in time, the right to hire new members or new fixed-wage earners. Ben-Ner develops an account that shows why an increase in the profitability of workers’ managed firms leads to the expansion by employing wage labourers rather than employing new members of the cooperative. The reason is that for the *existing* number of members, their income is maximized by behaving the same as capitalist who maximize profits. Income of a member consists of revenues minus competitive returns paid to the production factors that are not owned by the firm, which includes the wages of members and fixed wage earners. If they would hire another member, she would be entitled to the remuneration that is

above the market wage, that is, above her opportunity costs of accepting a job at another enterprise. For this reason, the members may prefer to pay her the market wage – hire her for a fixed-wage – and enjoy the distributed fruits of her labour. The same holds when member retire or quit their jobs; if new members are hired, the expected future profits will be distributed among more people, decreasing the expected net for existing workers. Thus, the decision to hire another member is a decision to distribute the net – that is, the difference between the income and the wage - among more members. This net may either be positive or negative, dependent on future prospects of the firm; thus the expectations of future business and the technological efficiency of an enterprise play an important role in this explanation.

Workers-managers of the profitable enterprises are thus incentivized to hire wage labourers instead of new members with control rights. The argument applies for the firm that is expanding and looking for new employees, or to the situation in which one of the existing members of a LMF retires or quits the job, and the replacement is sought. As a consequence, a worker-managed firm may experience a gradual demise; membership will decrease and limit to only few individuals when most of the previous members will retire or quit their job. Because of turnouts and retirements only few initial members will eventually remain in control “until a complete transformation into a capitalist firm has occurred” (Ben-Ner, 1988b: 300). Then workers’ managed firm “will become a KMF in all but name” (Dow, 2003: 222).

Of course, the appropriability hypothesis does not necessarily come into play. Members may highly value the democratic ideals which the cooperative enterprise promotes, and decide to promote this ideal. Also, the enterprise may be structured in a way to prevent any opportunist speculations from its existing members. Finally, the economic environment may be uncertain and as such prevents speculations by existing members about the future success of the cooperative. But if these conditions are not fulfilled, the theory predicts that we should expect a decreasing members/wage-workers’ ratio over time in successful LMFs. Empirical evidence provides support to the hypothesis. Craig and Pencavel (1992) provided data on membership as a percentage of the employment in

plywood cooperatives. He found a statistically significant trend that indicates an increasing employment of wage-workers. Berman (1982: 84-5) similarly finds that the plywood companies, once established as worker-managed, have rarely expanded by hiring new members; rather, wage-labour was employed in order to address for the demands of the markets. Finally, Ben-Ner (1988) observes that wage-workers occupy a large fraction of the workforce in the European self-managed enterprises.

The appropriability hypothesis yet again provides a plausible account of the higher formation of CMFs, and indirectly explains the relative paucity of democratic governance. Unlike the previous two explanations, the efficiency of self-managed enterprise plays a role in the explanation of LMF degeneration; but the opposite role that the Efficiency Branch would suggest; more efficient LMFs have higher chances of degeneration (Dow, 2003: 221).

5.4 Conclusion

The logic of organizational formation dictates that the beneficial factors must exceed the impediments that the formation of an organizational mode implies, if the mode is to be created (Ben-Ner, 1988b; Bonin et. al., 1933). When it comes to self-managed enterprises, some of the impediments are related to the reluctance of professionals to form LMF coalitions, or to workers' wealth constraints and their risk aversion, or finally to the reluctance of investors to finance LMFs or to the higher costs of financing due to possible hazards for the investors. In this chapter, I have argued that the appropriability hypothesis provides some plausible explanations of the disadvantages that hit LMFs.

Williamson developed an explanation of firm formation along the lines of the intentional design; in their opportunist deliberation, individuals promote more efficient organizational structures. But do individuals design organizations to be efficient, or do they enter individually more beneficial contractual relationships, which also promote more efficient structures? If it is the first, the problem of bounded rationality and uncertainty introduce difficulties, and Williamson must ultimately rely on the efficacy of competition on the markets to select for efficient enterprises. This explanation

reintroduces the elementary problem: we cannot explain prevalence in terms of disappearance only, we also need an account of emergence.

Another possibility for Williamson is to argue that self-interested contracting promotes more efficient organizational structures. The appropriability hypothesis suggests that this may be so, but only if *efficiency is defined relative to the objectives of the agents in control of an enterprise*. That is, investors, managerial labour, and other professionals all have vested interests in the capitalist enterprise, where they can appropriate higher rents and achieve higher status. Similarly, members of an existing LMF may recognise that by profit maximizing behaviour – hiring wage-labourers – they may appropriate larger share of the success of a LMF. Because in this way LMFs usually degenerate into CMFs, this also provides a plausible explanation of the relative paucity of LMFs. The upshot is that a capitalist enterprise is favoured independently of its technological efficiency.

I do not claim to have provided *the* explanation of the paucity of LMFs. Other factors contribute to their lower formation relative to CMFs. Many remain untouched. But I have provided a plausible solution to the bewildering dilemma; LMFs do not have to be inefficient to be rare.

VI. Concluding Remarks

Democratic participation has not yet found its way into an economic enterprise, at least not to a degree that it is accepted in the political sphere. On philosophical grounds, its paucity is not justified; arguments have been developed in the literature that defend self-managed enterprise on the grounds of equality (Miller, 1989; Plant, 1989), democracy (Dahl, 1970; Archer, 1996), inalienability (Elleman, 1992), human dignity (Skalicky, 1975; Elleman, 1992), and community (Walzer, 1983). Oliver Williamson (1985: 271) himself admits that the capitalist firm falls short of the Kantian imperative not to treat workers as the means to the capitalist' ends. We should thus defend democracy in the economic sphere as workers in the same way we stand behind democracy as citizens. If the moral superiority is clear, why then does it remain a peripheral mode of production?

Oliver Williamson, Armen Alchian, Michael Jensen, William Meckling, Harold Demsetz, Scott Arnold and Henry Hansmann all develop different theoretical frameworks that explain why hierarchical governance is technologically superior to democratic governance. Self-managed firms are rare in the market environment, they argue, because the logic of economic efficiency does not allow it to succeed. Therefore, we should be able to infer the inefficiency of LMFs from their paucity. In my thesis, I have questioned the propositions along these lines. I have questioned the proposition that paucity is the evidence for efficiency. I have questioned the assumption that we can infer relative efficiency from prevalence of an organizational form. I have questioned the evolutionary argument that allegedly supports this inference. I have questioned the adaptationist flavour of the proposition that paucity of democratic governance justifies - on economic grounds - the paucity of the democratic governance. In addition to these obvious aims, my thesis also has a more hidden agenda; to question the notorious 'what is, ought to be' corollary that was employed in the discussion on democratic governance, and which promotes hands-off political governance. I argued that the fact that CMFs *are* (prevalent), does not mean that they *ought to be* accepted. Or from the other side of the coin; the fact that LMFs are rare does not mean that they should not be pursued.

Why would *is* imply *ought* in the first place? The Efficiency Branch relies on the evolutionary argument with the adaptationist flavour that supposedly grants the conclusion that the efficient organizational forms gradually prevail on competitive markets. The blueprints behind this idea in the theory of the firm came from Alchian (1950) and Friedman (1953). While they focus on profitability of a neoclassical firm, they proposed similar conclusions. Briefly; in order to predict the populational dynamics on the markets, and the outcomes that will eventually result, we do not need to know what the determinants of the behaviour of businessmen are. Whether they maximize profits or they just aim to cover the costs of production, we can apply the neoclassical framework in order to predict the outcome. Whatever is more profitable strategy under given circumstances, that strategy will prevail in the population, because the firms that deviate from it (in relation to other firms) will be eliminated. This proposition was modified and employed the Efficiency Branch in order to argue that organizational forms evolve in a population. Instead of looking at the competition among firm behaviours, the competition among organizational forms took the central stage; instead of profitability, the comparative institutional analysis was employed. While other forces may exist that are relevant to explain organizational dynamics, they are all subsumed by efficiency, which drives the evolution of an economic organization. This allows the adherents of the Efficiency Branch to infer relative inefficiency from the relative paucity of LMFs. Inference of efficiency from prevalence is what I called the Thesis.

The literature review introduced in Chapter III reveals that there is actually no consensus, on theoretical level at least, about the inefficiencies of the democratic organization of labour. The effort levels of workers can be guaranteed with the peer control in the democratic governance; empirical evidence suggests that effort levels are at least as high in cooperatives than in capitalist enterprises. The costs of the collective decisions may be reduced with an appropriate constitutional design of cooperatives without a sacrifice in workers' decision rights. The evidence of paucity of LMFs, and the possibility that they are actually not inefficient, poses a dilemma in the light of the Thesis; if relatively efficient, why are there so few?

How to solve the dilemma? One thing is to establish firmly that LMFs are efficient in the light of their paucity. From this it follows that the Thesis is false, which solves the dilemma. Another way is to go after the Thesis directly. I have decided for the latter, and argued that the evolutionary argument does not support the Thesis, as presupposed by the Efficiency Branch. In the fourth chapter, I introduce the intuition why the Efficiency Branch may be wrong in arguing that the efficient structures prevail. I have argued that the adaptationist programme provides incomplete view of evolution. The upshot is that we cannot infer differential survival rate from differential prevalence, because the relevant factor of the differential prevalence may reside in the birth rate. A glance to the organizational demography confirmed the intuition; data indicates that CMFs are created much more often, either by novel creation or by transformation. Survival rate of LMFs and CMFs is about the same. This suggests that the difference in formation is important to understand the paucity of LMFs.

How to explain the higher emergence of CMFs? We can argue that individuals weigh the costs and the benefits of alternative organizational forms, and believe that capitalist enterprise is more efficient organizational form. In this case agents would more often enter contractual relationships under the CMF structures, because they believe them to be more efficient than LMFs. This would explain higher formation rate of the CMFs, but would it guarantee that CMFs are actually more efficient than LMFs? Can individuals form infallible beliefs about the efficiency of organizational structures? Bounded rationality and uncertainty that are part of the framework that Williamson himself proposes pose problems to such conclusions.

A possible alternative to the above is to argue that opportunist individuals enter individually more beneficial contractual relationships more, and that these contracts necessarily result in more efficient organizational forms. This would also explain higher emergence of CMFs with efficiency considerations; capitalist enterprises are formed more often because they provide higher benefits to the agents involved, which also means that they are more efficient. A large chunk of the fifth chapter is devoted to counter this claim. I introduce the appropriability hypothesis, which suggests that CMFs

are formed more often not because they are more efficient in a technological sense, but because they provide greater benefits for certain groups of agents that are in control of the enterprise. The appropriability hypothesis counters Williamson intentional explanation by detaching the technological efficiency of an organizational structure from the benefits of the parties to the contract. There are three ways in which LMFs are disadvantaged against CMFs without being necessarily inefficient. Firstly, when two comparable business projects are proposed to investors under democratic and capitalist governance, the investors will always prefer to invest start-up capital in a capital managed firm. One of the reasons is that a CMF allows them to appropriate higher rents than they could in a LMF. Similarly, managers and high-skilled labour are reluctant to form LMF coalitions, because they may appropriate higher wealth and status in the capitalist enterprises. These two reasons may explain why CMFs are more often created from the scratch. Finally, the appropriation hypothesis may be applied to explain why many LMFs degenerate in CMFs. If democratically governed enterprise is profitable, members will be incentivized to hire wage labour instead of new members in order to appropriate higher future returns. Eventually, the LMF will turn in a CMF.

Williamson has responded to Stephen Marglin (1974) who proposed his version of the appropriability hypothesis in order to explain prevalence of hierarchical economic governance. I argue that his criticism is to some extent misplaced, and because it nicely recaps the point I am making in this thesis; it would be useful to cite him in length.

“Power considerations will usually give way to efficiency—at least in profitmaking enterprises, if observations are taken at sufficiently long intervals.... This does not imply that power has no role to play, but we think it invites confusion to explain organizational results that are predicted by the efficiency hypothesis in terms of power. Rather power explains results when the organization sacrifices efficiency to serve special interests. We concede that this occurs. But we do not believe that major organizational changes in the commercial sector are explained in these terms. The evidence is all to the contrary.” (Williamson and Ouchi, 1983: 29-30, my emphasis).

The reply to Marglin above is a telling characterization of the point I am trying to make against the Efficiency Branch. Williamson and Ouchi ultimately rely on the efficacy of the competitive markets to select for efficient organizational forms, and argue that power considerations are irrelevant on the long run. That is, if capitalist enterprise emerges more often because certain powerful groups have vested interests in this form of organization, workers' managed firm would displace it by now if it would be more efficient. Again, the idea is that the survival of organizational forms ultimately decides the prevalence of organizations. But Williamson, I claim, is mistaken, and the intuition for this was provided in the fourth chapter, where I have argued that both birth and survival are important for prevalence. This intuition was strengthened by the empirical data that shows that the reason for prevalence of CMFs may indeed lay in their much higher formation rates. Marglin (1974: 84) actually makes a similar point when he argues that "technological superiority [is] neither necessary nor sufficient condition for the rise [emergence] and success [survival] of the factory".

Where does this leave us in relation to the main research question? The appropriability hypothesis suggests that formation rates of organizational forms can be explained independent of their efficiency. Capitalist enterprise allows higher appropriation of benefits for certain groups of agents, and as such enjoys easier access to capital and high-skilled labour. In the case of degeneration, it is even the case that efficient LMFs have higher chances of being transformed, because the members may opportunistically seek for higher future incomes by employing wage-workers. The appropriability hypothesis provides a plausible explanation of the paucity of LMFs. This being said, I do not claim to have found *the* explanation of differential prevalence. I have rather proposed *a* solution to the dilemma; if LMFs are efficient, why are they so few of them? The solution is, simply, that they do not have to be inefficient to be rare. This leads me to conclude that we cannot infer relative inefficiency from the paucity of LMFs. Relatedly, the paucity of LMFs do not provide a justified belief in the hypothesis that LMFs are relatively inefficient forms of economic organization.

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