Worker Cooperatives and the Financial Crisis

A case study of Mondragon Corporation

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Summary

This thesis reviews cooperatives in the light of the financial crisis in 2008. This is done by performing a survey on the theoretical and empirical literature relevant for cooperatives in general, and by performing a case study of the cooperative group Mondragon Corporation. The purpose is to investigate what conclusions can be drawn about the viability of cooperatives, how they react to financial crises and how the economy would be affected by a larger fraction of firms being cooperatives.

Section 1 defines the core issues of the thesis. I then move on to define the worker cooperative in section 2. The ideal-type worker cooperative is a firm fully owned by its workers, and the ownership is equally distributed. The cooperative has a "one person one vote" internal democracy. In section 3 I review some of the philosophical and pragmatic reasons for studying cooperatives. The idea of egalitarianism is central to cooperative theory, which in itself might be sufficient motivation for studying the cooperative. But the very presence and endurance of cooperatives in most economies today entails a need to understand what cooperatives are and how they work.

The theoretical and empirical research on cooperatives is presented in section 4. First, the long-standing debate of how to model a labor-managed firm is treated. I then move on to the empirical research on cooperatives, before I mention certain obstacles to cooperative formation and survival. Sections 2, 3 and 4 thereby constitute a survey on the cooperative literature.

In the last section I present the Mondragon Corporation as a case study. The cooperative has grown and prevailed for decades, and employs over 85,000 workers worldwide. Its headquarters are situated in the Basque Country in Spain. With regards to the economic problems Spain is experiencing in the aftermath of the financial crisis, a study of Mondragon can provide us with important insights about how worker cooperatives react to crises.

The conclusion is that Mondragon provides insecurity in income but security in employment for its members. This is the opposite of how a capitalist firm reacts to crises. Capitalist firms will usually react to a fall in demand by firing employees, not by adjusting wages downwards. On the other hand however, Mondragon also has a large portion of its workers hired on normal wage contracts. Mondragon has acted in a similar manner as a capitalist firm towards this group of workers.

Prologue

The financial crisis in 2008 and onwards led to widespread debates about how the globalized economy is organized. In particular the financial sector has been subject to a series of discussions on how to prevent new crises in the future. The governments' bank bailouts and the somewhat tighter regulations that followed led to an acceptance in the political sphere of the need for interventions in the finance market. But the ongoing debate often lacks the perspective of how production itself is organized. It is now apparent that mass unemployment is not something reserved for the "rough 1930's". To limit the economic debate only to policies at the macro level or, for that matter, about leaders' and stockbrokers' ethics, is limiting our ability to understand how the economy works as a whole. Surely it is necessary to have a macro policy that ensures stability and growth, but the nucleus, the firm, cannot be ignored.

The financial crisis showed us that the financial markets could create large problems for "the real economy". The lack of trust in the financial markets led to lower investment levels and higher unemployment in both developed and developing economies. Higher unemployment led to an increasing pessimism and consumer demand fell. It became a vicious cycle.

With this backdrop I started to read about the Mondragon Corporation, which is based in the Basque Country in Spain. Mondragon consists is a large group of cooperatives. They employ about 85.000 people at the moment, worldwide. They have companies in sectors as different as construction, kitchen appliances, supermarkets, finance and education. In 2009 Mondragon chose to reduce the workers' income by 8 percent as an alternative to the massive cuts in jobs seen in other firms and corporations. (The Economist, 2009) Some hired workers were laid off, but this was not a possible solution for the worker-members of the cooperative. They have an internal system of solidarity, which makes the member cooperatives liable for losses suffered by other cooperatives. Both this solidarity system and the fact that worker-members could not be fired, are examples of distinct features of cooperatives. Capitalist firms, on the other hand, would normally face difficulties when trying to implement wage cuts. This is a well-known credibility problem in the interaction between a company and its employees: How can the employees be sure that wage cuts are really necessary? And if they manage to agree on wage cuts, how can they be sure that wages will be adjusted up once the difficult

period is over? Cooperatives such as Mondragon do not face these dilemmas, since the workers also own the firm.

Could it be that an economy consisting of more cooperatives would be more stable and less vulnerable to the problems caused by the vicious cycle following credit crunches? If firms implemented wage cuts rather than job cuts, this would lead to less insecurity amongst the employees about their future and livelihood. As a result the sharp drop in consumer demand, adding to an already difficult situation, could be dampened.

The Spanish economy was severely hit by the crisis, and is still struggling to recover. By the end of 2010 Spain had an unemployment rate of 20,2 percent (Eurostat, 2011a). Unemployment among youths below 25 years of age was at a 41,6 percent rate in 2010. This is twice as high as only a couple of years before, and the highest rate since 1994. (Eurostat, 2011d) The situation is obviously dramatic, but also provides us with an opportunity to study how a cooperative manages through a crisis. It is a cooperative, but Mondragon operates in the same world as other firms, and the fall in demand obviously affects them as well. As chief of human resources in Mondragon puts it: “We are private companies that work in the same market as everybody else. We are exposed to the same conditions as our competitors.” (The Economist, 2009)

I was fortunate enough to get an opportunity to visit the Basque Country and Mondragon. When I have talked to people about the visit afterwards, some are surprised to hear that Mondragon is a multinational corporation and not some “hippie collective”. But this image of cooperatives can safely be put aside. Cooperatives are, along with capitalist firms, an answer to the economic reality in which people live. As with capitalist firms they exist in many shapes and forms, and have successes and failures.

This brings me to what this thesis is about: How do cooperatives react in times of economic crises, and to what extent are cooperatives a viable alternative to capitalist firms? An answer to these questions could bring us one step closer to understand how the economy would be affected if worker cooperatives constituted a larger fraction of the firms.

Acknowledgments

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I would also like to thank my supervisor Kalle Moene for all his help and encouraging comments throughout this process. Every time I walked out of his office he had given me new ideas to work with. I am grateful for the scholarship granted by the Centre of Equality, Social Organization, and Performance (ESOP), giving me the opportunity to travel to Mondragon.

Lastly I want to thank Ingvild for proof-readings and pep talks. All mistakes are of course my responsibility alone.

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1 Core issues

Knowing there are well-functioning firms organized as cooperatives, it is necessary to understand the mechanisms at work in these types of firms. Even still, research on the cooperative is often considered to be somewhat on the fringes of economic theory. This has not only prevented insight about cooperatives, but also prevented insight about the capitalist firm itself. As Dow (2003:2) notes:

Despite much attention within the profession to the organization of firms, the question of why large firms are conventionally controlled by investors rather than workers has not been high on the economic research agenda, perhaps for the same reason that fish do not study water.

The discussion about the cooperative is in reality also a discussion about the capitalist firm and its prevalence. From the economics' textbooks we usually deal with firms where a capitalist firm hires labor to produce some output. But considering the fact that the models deal with both capital and labor in a symmetrical way, we could easily turn the model on its head so that labor hires capital. This was pointed out by Paul Samuelson who said that it does not matter whether capital hires labor or the reverse (Dow, 1993:118). Following this logic we can make a distinction between "labor-managed" and "capital-managed" firms. But to define a cooperative simply as a labor-managed firm would be misleading.

With this in mind I started to work with the theoretical and empirical research on the field of cooperatives, with the following questions in mind: How do cooperatives react in times of economic crises, to what extent are cooperatives a viable alternative to capitalist firms, and how would the economy be affected if worker cooperatives constituted a larger fraction of the firms?

The remaining sections are organized as follows: First, I want to search for a definition of the worker cooperative. This is done in section 2. Second, in section 3, I try to answer the question why we should study cooperatives in the first place. Some justification has been given above, but I want to treat this subject more thoroughly. Third, I take a look at some of the theoretical and empirical research relevant for cooperatives in section 4.

Together, section 2, 3 and 4 serves the purpose of a survey of the literature. With this survey in hand I will take a look at Mondragon Corporation in section 5 to see how they dealt with the financial crisis. Special attention will be given to the effects on employment and investment. This is done by performing a survey the company's annual reports for the period 1998 to 2009.

2 The concept of cooperatives

The literature on cooperatives of different forms is vast and there is a lack of common terminology to describe the realities behind these organizational forms. For instance, Roalkvam (2006) seeks to promote the cooperative in general, but he does not go into depth to explain what really constitutes a cooperative. He adopts a definition of the cooperative as an economic entity where people voluntarily come together to cover their needs, and where participation is equal and active. Furthermore he emphasizes that in a cooperative one does not compete but cooperate. (Roalkvam, 2006:16) This is really more of a normative than descriptive definition of the cooperative, and it does not help us much when it comes to identifying the economic realities and rules of conduct within the firm. In fact, it can be argued that most of the definition would suit a normal capitalist company. A capitalist firm can also be described as "an economic entity where people voluntarily come together to cover their needs", and people do cooperate also in capitalist firms. The distinction between cooperation and competition is also too vague to work with in a theoretical framework.

First, it is necessary to define the firm. Dow (2003:92) defines a firm as "a set of agents supplying inputs to a common production process, where the productive activities of the agents are coordinated through an authority structure and the resulting outputs are sold on a market." This definition is suitable for both cooperatives and capitalist firms, and is a good starting point for further discussion.

What we can learn from the vague definition of the cooperative above is that it is not straightforward to capture the cooperative in a short stylistic definition. In section 1 a dichotomy between the labor-managed firm on the one hand and the capital-managed firm on the other is made. This might suffice as a coarse division of firm types, but it does not tell us much about the structure of ownership in the firm. As an illustration, consider a firm where the employees own more than half of the firm and an outsider owns the rest. In this case the workers do have the majority of the shares, and the firm would therefore fall in the category "labor-managed firm". However the workers cannot disregard the outside owner, if not for legal reasons then maybe in order to attract capital in the future.

Labor-ownership is not a sufficient measure for cooperatives. Labor-management is also necessary. But, as we shall see, these dimensions alone might not suffice to characterize a cooperative completely either. The terms "worker cooperative" or "labor-managed firm" do not tell us everything about the legal framework in which the firm operates. Some firms are in

practice worker cooperatives but are legally organized as limited liability companies. An example of this can be found in Trondheim, Norway, where the IT firm Kantega is legally registered as a joint-stock company, but can be defined as a worker cooperative because of its internal rules. These include rules prohibiting the sale of shares to outsiders and voting rules specifying equal voting rights. It is worth noting that they also have a minority of external board members. It is clear then that the term worker cooperative can be used for firms organized in different ways.

In order to clear up this topic, I will in section 2.1 present the cooperative in general, before moving on to worker cooperatives and similar firms in section 2.2.

2.1 Cooperatives in general

The term cooperative is widely used to describe organizations where consumers or producers, or a combination of these groups, together create and own what can vaguely be described as a democratic alternative to a capitalist firm. I divide cooperatives into two main groups: Consumer and producer cooperatives. Some might have a combination of the qualities described here, but a brief overview of the main types will be clarifying.

The first group is the consumer cooperative. The early roots of these cooperatives in Norway, for instance, can be found in the labor movement in the mid-1800s. One of the most famous leaders in this movement, Marcus Thrane, propagated the consumer cooperative as an alternative to buying food supply from the often expensive local grocery store. Early scholars in Norwegian social sciences, like Eilert Sundt, also supported the idea of consumer cooperatives. (Roalkvam, 2006:93-116) By the end of the 1800s consumer cooperatives were created all over the country and a national umbrella organization was founded in 1906 (Coop Norge SA, 2011). Today this Norwegian company is simply known as Coop, and it is still owned by its customers. Consumer cooperatives can be found worldwide, and counted in members these cooperatives far outnumber the other cooperative types. The “fan-owned” football teams around the world are another variant of consumer cooperatives. An example here is F.C. United of Manchester, which was created by former supporters of Manchester United after a controversial takeover in 2005. (F. C. United of Manchester, 2011)

The second kind of cooperative is the producer cooperative. This category can again be divided into two subcategories. I call them “pure producer cooperatives” and “worker cooperatives”. What distinguishes the pure producer cooperative from the worker cooperative is that the former consists of independent production units and is not a firm with member

workers. The most common producer cooperative is the farmers' cooperative. These are well known around the world, notwithstanding Norway where producer cooperatives like Tine and Nortura dominate the market for dairies and meats. Similar producer cooperatives can be found worldwide, for instance in New Zealand where Fonterra consists of 13,000 dairy farmers and constitutes the worlds fourth largest dairy company (Roalkvam, 2006:158). These companies are fully owned and democratically controlled by the participating farmers, but the employees in the cooperative itself are usually hired on normal wage contracts. For these reasons I exclude this form of cooperative from the further analysis.

In the next section I focus on the worker cooperative. In many ways this is a more heterogeneous subset than the consumer and producer cooperatives.

2.2 Defining the worker cooperative

While it is normally quite easy to define a consumer cooperative, this is not the case with worker cooperatives. In short, the ideal worker cooperative can be viewed as a totally egalitarian worker-owned firm. But when considering worker cooperatives in action it soon becomes clear that the ideal worker cooperative is not easy to find. In the following discussion I try to find a common denominator for the worker cooperative.

Moene and Ognedal (1990:36) have defined the totally egalitarian worker-owned firm as a firm where (i) only workers employed by the firm can be owners and the shares are equally distributed amongst the workers; (ii) important decisions are made by the principle of "one person one vote"; and (iii) the members in the firm decide what to do with the profits, and how to distribute it. Actually the two last conditions would probably follow from the first. If only workers employed by the firm can be owners then it follows that they also are the only ones that are in control of the residual claims, and the equal distribution of shares ensures the principle of "one person one vote". But the two last conditions point out the democratic nature of the cooperative. It is the suppliers of labor that are in charge of the cooperative, and each person has an equal right to take part in the decisions made.

It is worth noting that labor-management does not necessarily entail labor-ownership. In the Yugoslavian economy (see section 4.1) the state owned the firms, but the workers were allowed to collectively decide upon production plans. A labor-managed firm could also be a firm organized as a capitalist firm with the workers owning a majority of the stocks. These different firm types have in common that they to some extent provide means for the workers to take part in decision-making, take part in the residual claims in the firm, or both. But none

of these types are necessary to enhance firm democracy or to provide workers with increased incentives to work hard. Residual claims can be mimicked by bonuses and firm democracy can be improved by having employee representatives in the company board. The latter is a legislated right in many countries.

In Figure 1 I have borrowed from Dow a representation of the result of different combinations of asset ownership and control rights. Here the Yugoslavian firm mentioned above is named "Self-managed firm", while the joint stock company owned by its workers fall in the category "Laborist firm". The Socialist firm can be a state owned firm without worker-democracy, while the capitalist firm is well-known. Within this framework the worker cooperative will be a special case of the laborist firm. Worker-ownership in itself does not define the cooperative. For instance, a law firm might be owned by a group of lawyers, but the rest of the employees are hired workers. Inequality within a worker-owned firm will be discussed later in this section.

Figure 1, Source: Dow (2003:3)

		Asset ownership:	
		Private	**Public**
Control Rights:	**Control by capital**	Capitalist firm	Socialist firm
	Control by labor	Laborist firm	Self-managed firm

The concept of "residual claims" is used above, and is a common term in economic literature. This can be understood as "the claim on whatever firm income is left after other parties have received their contractual payments." (Dow, 2003:115) This concept is worth dwelling on. Even though it might seem unproblematic at first, it is not clear who the residual claimants are, or should be for that sake. A common sentiment is that the capital supplier "owns" the firm and is the residual claimant after costs, like wages, have been paid. But even though this observation often is made, it does not entail any necessity. In fact, the very notion that a firm can be owned is misguided. An asset, like the factory building, can be owned. But this is not to say that a firm, understood as a coalition of input suppliers (as in the definition of

the firm above), can be owned. Furthermore, asset ownership does not imply the right to receive residual claims. An asset can be leased by the firm from an outside owner, and payments specified in a contract. (Dow, 2003:115)

But, according to Dow, the problem with operating with the concept of residual claimants goes even deeper. The residual claimants bear risk, while "[e]veryone else has the security of a contractual guarantee, so risks associated with the firm must be borne by those agents who get the leftovers." (Dow, 2003:115) Hence the "owner" of the firm must choose the production plan. This is well illustrated by one of the standard textbooks in corporate finance by Jean Tirole (2006). He defines "corporate governance" as "ways in which the suppliers of finance to corporations assure themselves of getting a return on their investment." (Tirole, 2006:16) He briefly discuss the objections to this statement but disregards it throughout the book. Dow, on the other hand, argues that all agents connected with the firm bear some risk. He concludes that

> *[w]hat seems to be meant by 'residual claimant' is that under normal circumstances […] everyone else will get what they have been promised, perhaps except for minor random variations that are weakly correlated across individual members of the firm, while any major fluctuation in revenue or cost affecting the firm as a whole is borne by the specified residual claimant(s) alone.* (Dow, 2003:115)

The discussion about residual claims brings us right into the core of the democracy issue. If there are no "natural" receivers of the residual claim, then this can be thought of as a controller rent: The ones with the ultimate control of the firm also control the residual claims. Dow (2003:110) has the same interpretation when he notes that "residual payments follow control".

When the residual claimants are external capital owners, they often tend to not take externalities, like pollution or risk for accidents, into account when making decisions. Tirole (2006:56-57) briefly suggests a remedy for this problem, and argue that stakeholders could "internalize the externalities". He mentions a few of the externalities that proponents of "the stakeholder society" often would seek to curb. These include duties toward employees, communities, creditors, and ethical considerations on, for instance, child labor. This might be possible, but it is still not clear why capital should remain to be the residual claimants. In this respect it might be easier to internalize the externalities if labor constitutes the residual claimants. Some scholars argue that labor-managed firms to a certain degree internalize externalities. For instance, workers might take local pollution more seriously since they are the ones most affected by it (Moene and Ognedal, 1990:34-35).

In contrast to the classification illustrated in Figure 1, Jensen and Meckling (1979) have an alternative way of classifying firm types by using the concept of residual claims. They divide firms according to what extent "residual claims on the firm can be capitalized and sold by the claimants". To exemplify this scale they introduce six categories of firms (Jensen and Meckling, 1979:492): (1) The Soviet firm, where "neither individuals nor firms are permitted to have claims on returns generated by nonhuman productive resources or rights in deciding how such resources will be used."(Jensen and Meckling, 1979:498); (2) the Yugoslav firm; (3) the pure-rental firm, which is a hypothetical firm close, if not identical, to the Illyrian firm discussed in section 4.1; (4) the cooperative firm; (5) the professional partnership; and (6) the private corporation.

Their analysis rests upon some limiting assumptions though. In their "labor-managed firm system" the "tradable capital value residual claims [common stock] are legally prohibited" (Jensen and Meckling, 1979:470). The labor-managed firm is distinct from the cooperative according to them, and their type of cooperative admits new members without charging a membership fee. Furthermore, their definitions rule out the possibility that a cooperative can be owned by its workers:

> *"Labor-managed cannot mean that labor owns the firm in the traditional sense, that is, it cannot mean that tradable residual claims on the firm are held by employees. If that is all it means we are back to the traditional profit maximizing firm. What the term "labor-managed" really means is that the models being used presume there are legal prohibitions against the existence of tradable residual claims on the entire sequence of future cash flows generated by the firm (what we usually think of as common equity)."* (Jensen and Meckling, 1979:475)

This is too limiting for our purpose. If residual claims are interpreted as a controller rent, then this exclusion of labor ownership does not apply to the cooperative.

As mentioned above, it is not sufficient to characterize the worker cooperative simply by asset ownership and control rights. In this respect Jensen and Meckling have a point above when they say that a firm owned by the workers "in the traditional sense" would be going back to the profit-maximizing capitalist firm. The law firm mentioned above is one example of this. A capitalist firm fully owned by its workers but with uneven distribution of shares is another.

If we consider the ownership dimension, we see that many firms in fact can be something "in between" a cooperative and a capitalist firm. These deviations might occur in

different ways, and two examples were mentioned in the last paragraph. Starting with the definition of the fully egalitarian worker-owned firm given at the beginning of this section, Moene and Ognedal (1990) identify three different types of defections from this firm type: (i) The shares can be unequally distributed among workers; (ii) external owners can block important decisions; or (iii) hired labor (non-members) do not have voting rights, hence break with the principle of "one person one vote".

The definition of the fully egalitarian worker-owned firm suits our understanding of what a cooperative is. But if we were to follow the definition in the strictest possible way, chances are we would not find any cooperatives in the real world. In Mondragon, for instance, a portion of the workforce are not members of the cooperative. This leads us to the issue of how much inequality we can accept within a cooperative. Moene and Ognedal (1990) suggest a measure of ownership inequality by using Lorenz curves, as illustrated in Figure 1. From the Lorentz curves it is also possible to compute the Gini coefficient, ranging from 0 to 1, measuring the degree of inequality. A Gini coefficient of 0 would then indicate total egalitarianism while 1 would be the case where one person owns all the productive assets.

Figure 2 on page 10 gives us some examples of different degrees of ownership distribution. Starting with Figure 2A, this depicts the fully egalitarian worker-owned firm. In this case the Gini coefficient is 0. The firm in 2B represents a firm where all shares are owned by its workers, but unequally distributed. Figure 2C represents an egalitarian firm, but with some external shareowners. Figure 2D is a firm where only workers own the firm, but where some of the workers are hired without ownership rights. This is for instance the case in Mondragon. In Figure 2E we have internal and external owners who hires labor without ownership rights. The last one, figure 2F, is a firm where some of the employees own some shares in their own company. An example of this is the American firms participating in the Employee Stock Ownership Program (ESOP), which provides firms and employees with tax incentives to increase employee ownership.

When considering these different firm types, we see that the Gini coefficient give us a measure of inequality in distribution of shares among those holding them. But it does not tell us anything about who these share-owners are. For instance, the firms illustrated by the figures 2B and 2C seem to have about the same Gini coefficient (since it is measured as the size of the grey area between the diagonal and the Lorenz curve). But while the firm in 2B is fully worker-owned, the firm in 2C has external owners. Provided a firm is fully owned by its workers, we could in choose some threshold level on how much inequality in ownership we

can accept within a cooperative. But still many cooperatives have some hired workers, distorting the information given by the Gini coefficient.

If the term “worker cooperative” is to be of any use, there must be some demands connected to equal distribution of ownership and voting rights in the firm. But exactly where this limit should go is a difficult question. If a firm has too many hired workers then it is difficult to name it a cooperative. On the other hand, in Mondragon there are many workers on normal wage contracts. Still, few would call the firm a capitalist firm.

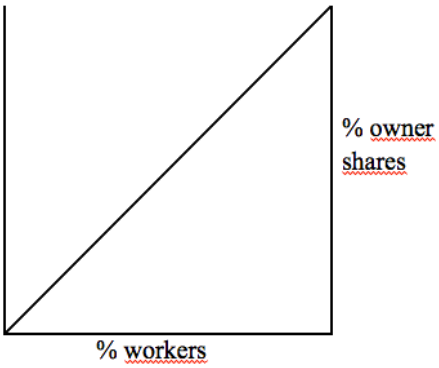
A defining quality about cooperatives is also their internal rules and guidelines ensuring the egalitarian structure to perpetuate. The totally egalitarian firm illustrated by Figure 2A can also illustrate a newly created business with ownership equally shared among the entrepreneurs. As time goes by, employees without ownership might be hired, or some of the entrepreneurs choose to sell out. This leads the firm to “degenerate” into a normal capitalist firm. This has happened to a quite a few worker-owned firms, for instance the car-rental company Avis, which was formerly worker-owned.

A somewhat unsatisfying solution to the definition problem might be to qualitatively analyze a real cooperative firm and measure it up against the ideal cooperative firm. The ideal cooperative firm is an organization where the workers fully own the firm and ownership is equally distributed. This leads to a “one person one vote” system where the workers fully control the firm. Some deviations might appear, but internal rules based on cooperative values will lead the firm back into the cooperative type firm.

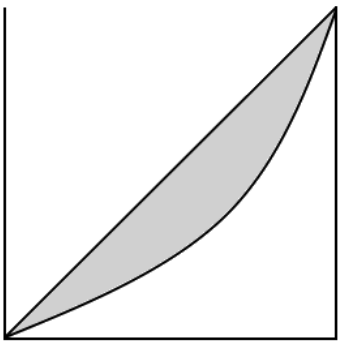
A firm organized like this would have a wider, or at least a different, action space than the capitalist firm when facing a financial crisis. A capitalist firm will face problems when trying to cut wages, since the workers do not know whether wage cuts really are necessary. Furthermore, the workers cannot be sure that wages will be adjusted back after the initial crisis has passed. A capitalist firm would then have to fire people to “signal” that they are in real economic distress. Assuming the capitalist firm follows the basic profit-maximizing rationale, and hire people until marginal cost equals marginal revenue, then to fire its workers would be a proof of distress; If they fire workers this must mean that marginal costs now has exceeded marginal revenue. The credibility problem between the management and workers vanishes in a cooperative, at least in theory, since the workers themselves own the firm. If demand declines the cooperative can decide to reduce wages or, more correctly, dividends paid to the workers instead of cutting costs by firing people.

Figure 2, Source: Moene and Ognedal (1990:38)

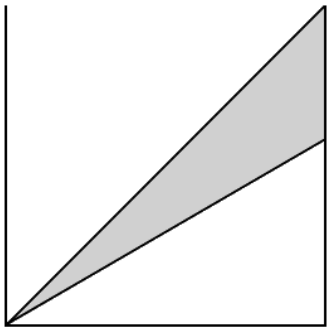
(A) Egalitarian



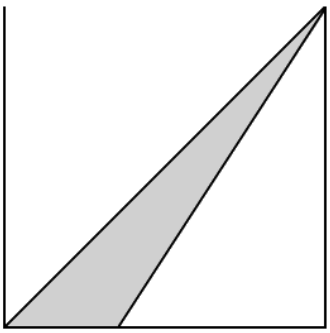
(B) Aristocratic



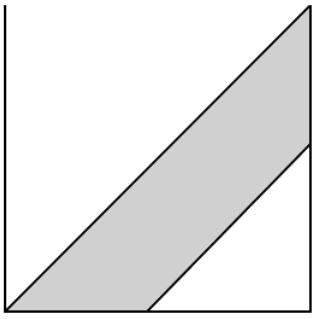
(C) External owners



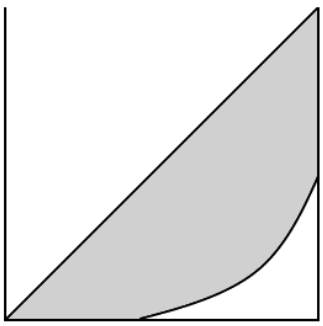
(D) Worker-capitalistic



(E) Cooperation between labor and capital



(F) ESOP-type firm*



* The type (F) firm is called ”The Conservative Party’s self-owner democracy” (Høyres selveierdemokrati) in Moene and Ognedal (1990), refering to the Norwegian conservative party.

3 Why study cooperatives?

It is also worth spending some time to answer why we should study cooperatives. A short answer is that cooperatives exist all over the world and constitutes a large portion of firms in certain areas. It is therefore of interest to learn how they work and how they differ from capitalist firms. In a wider sense it is also interesting to take a look at the more philosophical reasons to study cooperatives. Cooperatives have played a role as a remedy for the undemocratic nature of capitalism itself, as in the works of scholars like Robert Dahl, Jaroslav Vanek and John Stuart Mill. There is a degree of historical connotations to cooperatives that may have led people to consider cooperatives as merely utopian models or ideas. Many scholars may have been mainly interested in cooperatives because it constitutes an alternative to capitalism. More knowledge in this area would lead to less prejudices, or correspondingly a more sober view, about cooperatives.

My main objective for this thesis is to look at cooperatives in the light of the financial crisis. Many scholars have searched to answer variants of these questions. In the following section I present the views of some of the prominent philosophers in cooperative theory, including those mentioned above. I conclude by presenting a more pragmatic reasons for studying the cooperative.

It is often claimed that cooperatives is an ancient way of organizing production amongst farmers. Throughout history a legion of different cooperative models have been tried, and even whole societies founded on cooperation, solidarity and sharing. (Roalkvam, 2006) The Kibbutz societies in Israel, built on a combination of Zionism and Socialism, are examples of this. What is common for most of the more or less idealistic cooperatives throughout history is that they were formed by a group of people as an answer to materialistic demands from the society in which they belonged. It is worth noting the historical notion of cooperatives as a framework in which the less fortunate could join forces against an outside challenge. This is quite contradictory to the individualist entrepreneurial spirit that is often highlighted as the driving force in the capitalist firm and economy. Estrin (1989; cited in Dow, 2003:46) studied the cooperatives of the early industrial revolution and suggested “that early working cooperatives can be regarded as efforts to restore conditions of pre-industrial production”. In the light of this historical context it is easy to see why worker cooperatives are often shrugged off as idealist and/or archaic projects that have been wiped away by economic evolution. However, there are plenty of examples of well-run firms organized as

cooperatives. If they have survived there must be some qualities of these firms that allow them to prevail.

Vanek (1971) uses cooperatives as the basis in his theory about an alternative way of organizing the economy. He promotes a "third way" differing from both the Soviet and the Western economy: The Participatory Economy. He identifies five characteristics of this economy. (Vanek, 1971:8-12) The first one is the labor-managed firm, or the "participation in management". The principle of "one person, one vote" must be implemented in each firm with elected representative bodies. According to Vanek the important factor here is "active participation in the enterprise", not ownership of the productive assets. The second characteristic is the sharing of income. This sharing needs to be equitable but not equal for different jobs, and the workers may decide to retain some of the earnings, for instance for investment. The third one is considering finance. Productive capital can be leased but this cannot entail any control right on the capital owner's part. The fourth and fifth characteristic features are a decentralized market economy and the freedom of employment, respectively.

Vanek argues that this economy will combine the interest of the members of the labor-managed firms and the collective as a whole. Each firm would therefore want to maximize income per worker instead of profits. We will get back to the income-maximizing firm below, in section 4.1. Vanek claims an economy as described above is a robust economy with full employment. In the case of an economic crisis "there are forces inherent in the system that will tend to restore full employment." (Vanek, 1971:28) This last assumption is not something unique for Vanek's economy however. Full employment is also the equilibrium solution in the common economic textbook models.

Robert Dahl considers worker-democracy as an absolute necessity in a democratic society. Accordingly he upholds that "[i]f democracy is justified in governing the state, then it must also be justified in governing economic enterprises; and to say that it is not justified in governing economic enterprises is to imply that it is not justified in governing the state." (Dahl, 1985:111, emphasis deleted) He treats three different arguments against this statement:

1. A system of labor-managed firms violates a general property right.
2. The decisions made in an economic entity are not binding in the same way as for citizens in a state. Employees are voluntarily participating in a firm.
3. Economic entities are so prone to oligarchy and hierarchy that democracy in any case is deemed to lose. It is therefore futile to work for worker democracy.

(Dahl, 1985:111-112)

All of these arguments are in turn contested by Dahl. The first point is met by three main arguments. First of all the property rights are reinforcing differences in "wealth, income, status, skills, information, propaganda and control with information, access to the political leaders, and the general predictable opportunities in life, not just for adults but the unborn and for children." (Dahl, 1992:65, my translation of the Norwegian version) Secondly he contests the very idea that "corporative capitalism" rests upon an inalienable right. According to Dahl economic freedom cannot be above political freedom or political equality. Dahl's third argument is that if we were to understand the property right in a fundamental moral sense, as "the right to obtain the personal resources necessary for political freedom and a decent life", worker democracy would probably strengthen this right. (Dahl, 1992:102, my translation of the Norwegian version)

Dahl counters the arguments in the second point by identifying equalities between the firm and the government, for instance in how a person submits to a state and a firm. A person is free to quit the job, but in democratic countries she is also free to leave the municipality or even the country. It might be costly to leave a country, but it might also be costly to quit a job. The third point is also met by pointing out the analogies to democratic structures in a state: "It is not unreasonable to expect that democratic structures in governing the workplace would satisfy the criteria of the democratic process neither markedly worse nor markedly better than democratic structures in the state." (Dahl, 1985:134)

The idea of worker-ownership as a just way of organizing the economy was strongly supported by John Stuart Mill. He viewed the cooperative economy as "the nearest approach to social justice, and the most beneficial ordering of industrial affairs for the universal good, which it is possible at present to foresee." (Mill, 1936, qouted in Putterman et al., 1998:886)

There is a close link between Dahl's discussions on democracy and the equality issue. In a discussion whether cooperatives could strengthen equality in society, Putterman et al. (1998:866) identify three different approaches to this subject (besides a pure monetary measurement): (1) The equalization of individuals' level of functioning, as in Amartya Sen's capabilities approach. (2) The equalization of resources, both transferable and non-transferable. And (3) the equalization of opportunities. Though it is not the only resource that can be redistributed, wealth and income is the most common measurement of inequality and by far the easiest. Of the two measures, wealth and income, some egalitarians have argued that a certain degree of income inequality is unavoidable but that inequalities stemmed from capital can be eliminated. (Putterman et al., 1998:882-883) There are of course a lot of ways

to achieve redistribution of wealth, each associated with difficulties. Putterman et al. considers two different theoretical approaches to this subject, namely public ownership and worker ownership. Could worker ownership be a way of promoting equality? This has shown to be the case when it comes to land reform. A wide range of studies lend support to the idea that land reform, redistributing land to poor farmers, have increased output in the economy. (Putterman et al., 1998:867) Although there are large differences between production in the modern economy and in farming, this is an interesting finding. When monitoring costs are high the productivity, and hence the total output, can be increased by transferring the ownership to the ones that supply labor (Putterman et al., 1998:868).

The equality approach is also supported by Wilkinson and Pickett (2010:254-263), which emphasize the distributive element of employee ownership and cooperatives. While reluctant when it comes to the potential in employee ownership schemes like ESOPs, they are more positive when it comes to cooperatives.

The imperfections in the credit markets can be a source for productivity improvements when redistributing wealth. This has been upheld by many critical voices in the aftermath of the financial crisis, but then usually considering "big finance". A similar claim can be made on the firm level. Usually an entrepreneur has to invest some of her own wealth in the new firm to signal credibility to potential investors. (See for instance Tirole (2006).) This credit market mechanism excludes the poor from the entrepreneurial market, which in it self may lead to even more inequality. The same mechanism might also result in overinvestment, which could have been avoided by a more equal distribution of wealth. Hence inequality has an efficiency cost also due to imperfect credit markets. (Putterman et al., 1998:868-869) On the other hand, these examples are not enough to conclude that worker ownership leads to efficiency gains when everything is added up:

> *[I]f corporate efficiency is enhanced by having large shareholders, and if compensation of managers by way of current shareholding and the exercise of stock options is a critical way of motivating them to maximize the returns on assets, then an egalitarian redistribution of shares could lead to reduced efficiency.* (Putterman et al., 1998:884)

Dow (2003) has a more pragmatic reason for pursuing knowledge in the field of labor-management, namely to understand the current organization of the economy. More specifically he focuses on the control right problem of the capitalist firm: Why are capital suppliers the ones normally with the ultimate control of the firm? After all, this could have been turned on its head, with labor hiring capital. In fact he claims that "economists still lack a commonly accepted rationale for the prevalence of capitalist firms in market economies."

(Dow, 2003:8) According to Dow there are plenty of economists explaining why labor-managed firms are scarce. Jensen and Meckling, for instance, claim about labor co-determination that

[t]he fact that this system seldom arises out of voluntary arrangements among individuals strongly suggests that codetermination or industrial democracy is less efficient than the alternatives which grow up and survive in a competitive environment (i.e., one where organizational alternatives are on all fours legally). Of course, it is always possible that the frailty of industrial democracy is due to some "deficiency" which arises when individuals are given broader freedom in choosing organizational forms, but it seems reasonable to place the burden of proof on proponents of codetermination in this exercise. (Jensen and Meckling, 1979:473)

But in the line of Dow's argument this does not suffice. To take the current economic organization as given and construct models around them prevent us from understanding key issues in the field of economics:

Even if one lacks interest in any normative project to advance the cause of workers' control, surely it is important to explain why governance in private ownership economies are predominantly capitalist in its form. This cannot be done without considering what it means for a firm to have a capitalist structure and identifying the main alternative ways in which firms could be organized. The contrast with worker-controlled firms is surely an obvious one. Moreover, such firms are not hypothetical entities. They exist, they have often survived in competitive environments for a long period of time, and a large amount of information is available about them. The proof of the pudding is in the eating, but I believe that a systematic attempt to understand the successes and failures of workers' control can shed light on capitalism itself, including the reasons for its broad success and its continuing limitations. (Dow, 2003:12)

There is a range of claims about cooperatives that certainly need to be researched further. Some popular claims include that worker-ownership induces increased efficiency, and that they have a more stable level of employment. These claims are of interest for anyone seeking to promote a more stable economy. If cooperatives have a more stable level of employment, an economy consisting of a larger portion of cooperatives will be less vulnerable to mass unemployment and the vicious circle that follows.

4 Worker cooperatives in theory and practice

The purpose of this section is to perform a survey on the theoretical and empirical research relevant for cooperatives, and see what implications this has for the understanding of cooperatives and the financial crisis. A prominent debate in the field of labor-management has been how to model the firm.

The ownership and control dimensions are at the core of the corporate theory. When modeling the cooperative this is no exception. In a model of the cooperative these rights are assigned to the workers in the firm. But would a cooperative act differently from a capitalist firm? And if so, how would it differ? Since Ward's famous paper about the "Illyrian firm" (Ward, 1958) this has been a lively debate. As opposed to the capitalist firm, which seeks to maximize profit, the Illyrian firm seeks to maximize income per worker. In the next section I will present the Illyrian firm, or the Ward-Domar-Vanek model as it is often named.

The Ward-Domar-Vanek approach has been widely contested, both the model itself and its applicability to cooperatives. The problems stem from the lack of a market for membership. When we include a market for membership it can be shown that the cooperative will adjust its production in the same way as the profit-maximizing firms. This is discussed in section 4.2.

In section 2 we saw that some of the arguments for worker participation is founded upon a belief that this will lead to more efficient production and more a more stable employment policy. To treat these issues I will go through some of the empirical research on these subjects in section 4.3.

In section 4.4 I will discuss why worker cooperatives are relatively rare. One could easily assert, as many scholars do, that the very dominance of the capitalist firms is in itself a proof of the inferiority of cooperatives. In my opinion this is a too simplistic conclusion. First of all, the legal framework could be favoring capitalist firms. Secondly, when few worker cooperatives exist there are few places to learn how to start a cooperative. Some "critical mass" of cooperatives might be needed to leave entrepreneurs with a true choice of organization.

4.1 The Ward-Domar-Vanek model

The origin of the Ward-Domar-Vanek model is Ward's famous paper *The Firm in Illyria: Market Syndicalism.* (Ward, 1958) The paper marked the beginning of long debate about the nature of the cooperative, and its model has been extended to many different kinds of firms with one feature in common: They were all controlled by labor. According to Dow (2003:144) the most noticeable work in this field has been the use of the model to study Soviet collective farms (Domar, 1966), and the work done by Vanek (1970) in his modeling of a hypothetical economy consisting solely of labor-managed firms. For this reason it is common to name the framework after these scholars. I use the term "Illyrian firm" for a firm that maximizes income per worker.

The backdrop for the Illyrian firm is the market socialist economy of the 1950's Yugoslavia. This was an economy that had undergone reforms taking it several steps away from the Stalinist planned economy. After the reforms, the state no longer set output requirements for the firms, but left it to each firm to make annual production and sales plans. The firms could thereby freely choose contracts for the purchase of raw materials and sales. Its new goal would not be a stately planned output requirement, but profitability, i.e. more revenue than costs. Each firm was run by elected worker councils and had a profit-sharing scheme. In this way the workers set the wages themselves. The worker council could make binding decisions for the firm's director as long as it did not conflict with any laws. There could be differential wages but no wage could be set below a minimum wage required by law. The firm would pay a certain amount of rent for the capital equipment and land to the state. Profits made by the firm could be used either for investments or wage supplements for the workers. An eventual supplementary wage would be subject to a "steeply progressive profits tax". (Ward, 1958:567-570)

In Ward's paper, the modeled firm operates in a similar environment as described above, but without any state intervention. In my representation below the workers themselves own the firm, as is the situation in a cooperative. I will assume this does not alter the maximand, namely average income per worker. The firm in this model has one output F and one variable input, labor, measured by number of people employed, L. There is no minimum wage and the workers freely choose firm policies within a purely competitive market. Labor is a homogenous input. An investment B applies, and is a fixed cost. The marginal product of labor is assumed to be positive but declining as output increases. Output prices are denoted by p. The production function has the common properties: F(L) is increasing and strictly

concave. The only variable the workers can control is input of labor, which they will adjust so as to maximize average income per worker, y:

$$\max_L y = \frac{pF(L) - B}{L} \tag{1}$$

The first order condition is then

$$y' = \frac{pF'(L)L - (pF(L) - B)}{L^2} = 0 \tag{2}$$

.

Solving for F'(L) gives us

$$F'(L) = \frac{F(L) - B/p}{L} \tag{3}$$

.

Here L is declining in p, which means that when prices go up the firm will want to reduce its input of labor: When prices go up production goes down. This is the much-criticized backward-bending supply curve feature of the Illyrian firm. L is increasing in fixed cost B, meaning production goes up if fixed costs are higher. (See appendix for calculus.)

Actually, if we remove fixed cost from equation (1) the first order condition becomes

$$F'(L) = \frac{F(L)}{L} \tag{2'}$$

.

When F(L) is strictly concave then $F'(L)$ is strictly decreasing. The maximum value is only found when L approaches zero. What keep the employment up in the firm are the fixed costs. The intuition is that the more workers, the more people to share the fixed cost.

This simple model can be extended to include some unemployment benefit, or compensation, for the ones that have to leave the firm. It is reasonable to expect that the workers in a democratic firm would want to agree on such an arrangement. Will this alter the result from equation (3)? To investigate this I have included the compensation in equation (1). Because of the opportunity cost of labor we assume the compensation, denoted α, is smaller than y. L is still the number of members remaining in the firm, while n is the number of members ex ante. (n-L) is then the number of members that have to leave the firm. We get

$$y = \frac{pF(L) - B - (n - L)\alpha}{L}, \tag{4}$$

The first order condition becomes

$$y' = \frac{pF'(L)\cdot L - pF(L) + B + n\alpha}{L^2} = 0 \quad . \tag{5}$$

Solving for F'(L) to get

$$F'(L) = \frac{F(L) - \frac{B + n\alpha}{p}}{L} \quad . \tag{6}$$

Comparing (6) with (3) we see that L is also increasing in nα: The higher unemployment benefits, the higher number of remaining people in the firm. This is in line with common intuition. If compensation have to be paid it will be less profitable for the cooperative to expel members.

The variations over the Illyrian firm are many and it has been implemented in a series of different macroeconomic frameworks. Ward himself constructed a closed economy macro model consisting of only his kind of labor-managed firms. (Ward, 1967, referred to in Bradley and Smith, 1988:250) Jaroslav Vanek's participatory economy (see section 3) has the Illyrian firm as its nucleus, and he claims that "Yugoslavia under the participatory system has performed remarkably well[...]." (Vanek, 1971:49) Bradley and Smith (1988) reviewed both Ward's and Vanek's macroeconomic models, especially focusing on monetary policy in an open economy consisting of labor-managed firms. They do not share Vanek's positive image of the Yugoslavian economy: "There seems to be a consensus among development economists that the Yugoslav economy is subject to severe distortions of all prices, particularly capital prices, away from social opportunity costs." (Bradley and Smith, 1988:256)

On the microeconomic level legions of studies have been published, partly with the purpose of expanding the model, and partly trying to solve some of the problems arising from the assumption about maximization of income per worker. Miyazaki and Neary (1983:261) criticize the assumption that members accept that they might get expelled and argues that the Illyrian firm model "tacitly endorses the unrealistic assumption that workers disregard potential ex ante riskiness in income and employment." Their solution is to set up a two period model, in which the workers maximize their expected mean utility across different states of the price level, and hence employment level.

Meade (1972) argues that even though the short-run response of the Illyrian firm is to maximize income per worker, the result in the long run would be the same provided there is perfect competition and free entry (and exit) of firms. To see this, consider an economy consisting only of income-maximizing firms. At first, in the short run, the firms let new members in until the marginal product equals the average income of the workers. This is the Ward solution. But if some sectors see higher income per worker than others, then workers will change sector and start new cooperatives in the ones with higher potential income. This leads to increased output in the new sector and falling prices. This continues until the value of the marginal product of labor, and hence earnings per worker, is equalized in all sectors. (Meade, 1972:405-406)

Neary and Ulph (1997) build up a framework in which they contest the notion that any firm deviating "from profit-maximizing behaviour will be punished by forced exit […] from long-run industry equilibrium." They show that in a duopoly consisting of one capitalist firm and one Illyrian firm (Cournot competition), there is "(i) no equilibrium in which both firms make zero profits, and (ii) [that] the [labor-managed firm] will always be profitable if the [capitalist firm] is, but not the converse." (Neary and Ulph, 1997:309) This means that if conditions in a profitable duopoly were to change in a disadvantageous way, the capitalist firm would be the first one to exit. According to the authors, this idea of the labor-managed firm's robustness is supported by empirical evidence (Neary and Ulph, 1997:325).

Vanek (1971) argues strongly for the assumption of income maximization, although he notes that the mathematical model should only be seen as an approximation. He writes that in the Illyrian firm all non-labor input would be applied to the point where marginal revenue equals marginal cost. This is the same condition as in a profit-maximizing firm, and he notes that this maximizes average income per worker. Input of labor will also be adjusted so as to maximize income per worker. But since the workers are both a factor of production and the recipients of the income, they will adjust in the "Illyrian way", and not so that marginal revenue from labor equals marginal cost. (Vanek, 1971:43-45)

Furubotn (1971) replaces wage-maximization by "wealth-maximization" as an alternative to Ward (1958). In Ward's model none of the surplus is reinvested to increase productivity and thereby increase future income. Furubotn asserts that rational workers would see that they gain from investing in future income, and makes a multi-period dynamic model for the Illyrian firm. In his view Ward has just presented a special case of this dynamic model.

Although approaching the model from somewhat different angles, the above variations over the Illyrian firm have on thing in common. With a possible exception for Furubotn, they all take the assumption about income maximization for given. But is this assumption correct?

Amongst the problems of the Illyrian firm are also the claims that such a firm would suffer from severe horizon problems and common-property problems when it comes to investment levels. Hence, this firm would tend to underinvest. The reasoning behind this claim was that members in the Illyrian firm planning to leave the firm in near future "would have no stake in the returns on long-term investment, preferring instead to be paid a high wage today." (Dow, 2003:152) The same reasoning can be made about maintenance of productive assets. These problems are connected to the assumption about the absence of a membership market in the Illyrian economy. A shareholder in a capitalist firm can sell his share at a price reflecting the present value of future returns. By introducing a market for membership the same would be true for the price of memberships in cooperatives. (Dow, 2003:153-154) The membership market is discussed in the next section.

If we were to trust the Illyrian model as presented in the easy model in section 4.1, then a fall in demand, with decreasing prices as a result, would affect employment levels positively. But it can be shown that for the multiple input and output case, this backward-bending supply curve will disappear. Theoretical analysis with economies consisting of only Illyrian firms have been performed, but unless we believe the Illyrian model is a good way to represent the cooperative, a prolonged discussion about the macroeconomic consequences is unnecessary. If the cooperatives behave in the same way as the Illyrian firm, this would mean that an economy consisting of more cooperatives would suffer from a range of market distortions. Amongst these we have a less than optimal use of labor in production and underinvestment. These problems would not help dampen a financial crisis.

4.2 Markets for membership

Dow (2003) strongly objects the Ward-Domar-Vanek model and argues that it should be abandoned for good as an explanatory model for the labor-managed firm. He writes that "the model […] is not plausible in theory, it bears little resemblance to the organizational practices of real [labor-managed firms], and has only modest empirical support." (Dow, 2003:142) In addition to the criticism of the backward-bending supply curve, he upholds that the Illyrian firm "suppresses the labor market by assuming that the [labor-managed firm] ignores the gap between what insiders and outsiders are paid." (Dow, 2003:146) He argues

that there is nothing in the concept of labor-management that implies or requires the absence of a labor market.

So what does the cooperative maximize if not income per worker? It could be that the cooperative simply mimics the profit-maximizing firm. Or it might even be that the cooperative does not maximize anything at all (Dow, 2003:142).

Empirical studies on the labor-managed plywood cooperatives in the United States lend no support to the idea that the labor-managed firm would react with contraction when facing an increase in the product price. In fact such studies showed that the plywood cooperatives had "virtually no short-run response of membership size to demand or cost shock." (Dow, 2003:161)

The problems with the Illyrian firm led Dow (2003) to introduce a market for membership in the analyzes. Dow notices that it is the stock market that leads the capital suppliers to maximize profit, and that the same reasoning can be used for labor-managed firms by introducing a market for cooperative membership. A "membership market forces [the labor-managed firm's] insiders to value labor at its external opportunity cost, and therefore leads them to operate at a point where the value of labor's marginal product equals the outside wage." (Dow, 2003:149)

To see how this works Dow (2003) starts by presenting the Ward-Domar-Vanek model from a different angle than what is done in section 4.1. The point of departure is the same kind of firm, but without the fixed cost. This is for simplicity and does not change the result. To make the production function workable without fixed costs I assume that $F(L)$ is no longer strictly concave, but "S-shaped". Average product per worker at input L is then:

$$AP(L) = \frac{F(L)}{L} = F'(L) \tag{7}$$

The Illyrian firm maximizes average income per worker by the same mechanisms as shown before by choosing labor input L_0. The resulting income per worker becomes

$$y_0 = p \cdot AP(L_0) = p\frac{F(L_0)}{L_0} \tag{8}$$

This firm operates in a market along with capitalist firms, and Dow assumes as a starting point that income per worker in the labor-managed firm is larger than the outside wage in a capitalist firm: $y_0 > w$. If the situation was the other way around, that is $y_0 < w$, the workers

would leave the labor-managed firm for the capitalist firm. The capitalist firm will adjust in the usual way, that is to adjust labor to the point where marginal cost equals marginal revenue. Marginal product of labor is denoted MP(L), and we can write the profit-maximizing firm's wage level as:

$$w = pMP(L^*) \tag{9}$$

The assumption that $y_0 > w$ implies that profits in the labor-managed firm are positive:

$$pF(L) - wL > 0 \tag{10}$$

The outsiders (i.e. the non-members of the labor-managed firm) would want to leave the capitalist firm with wage w for the higher income y_0, and they would be willing to pay a fee to enter. Let this be represented by an income level y_1, where $w < y_1 < y_0$. The already existing members in the labor-managed firm would also gain from letting the new member in as long as the new member contributes with more to production than he costs, i.e. as long as $y_1 < p \cdot MP(L_0)$. So for any y_1 between w and $p \cdot MP(L_0)$ there would be mutual gains connected to an increase in the number of members in the labor-managed firm. The newcomer would receive $y_1 > w$, while the existing members can share the surplus $p \cdot MP(L_0) - y_1$.

Dow (2003:146) notes that "[u]nless such arrangements are explicitly prohibited, the original pair (L_0, y_0) cannot be an equilibrium[...]." The above argument shows that the labor-managed firm will choose to include new members until $p \cdot MP(L_0) = y_0 = w$, which is the exact same equilibrium condition as for the textbook capitalist firm.

When introducing a market for membership the worker cooperative adjust in the same way as the capitalist profit-maximizing firm. At first sight then, we would also expect the cooperative firm to react in the same way as the capitalist firm when facing financial crisis. We know that cooperatives exist, operating in the same markets as the capitalist firms. It is then possible to take a study of how cooperatives react to market changes, and compare this to capitalist firms. This would give us some more clues on what to expect from the cooperatives in times of distress. Some of these empirical studies are presented in the next section.

4.3 Productivity and employment

Two of the most interesting practical issues regarding the cooperative that have been raised so far are the claim that more worker-ownership and control might lead to increased

productivity, and the claim that employment might be more stable in a worker cooperative than in a capitalist firm.

I will start with the productivity issue. One way to investigate how worker ownership affects productivity is to study capitalist firms that have undertaken measures to increase employee ownership, and see how this affects productivity. The Employee Stock Ownership Program (ESOP) in the United States has led to increased employee ownership through tax incentives. A comparative study of the firms participating in this and similar programs has been done by Winther (1995). By a "before and after approach" he tried to compare firms that had undergone employee ownership programs. He found some evidence for the claim that worker ownership improved growth in sales and employment, although not without caveats. In a short survey of studies on employee ownership Wilkinson and Pickett (2010) conclude that ownership in itself does not induce increased productivity. But participation in management would.

Another way of studying the effects of worker ownership is to compare capitalist firms and cooperatives in the same sector. One interesting study in this respect was done by Craig and Pencavel (1995). They compared capitalist and cooperative firms in the plywood sector in Washington State. The sample of firms was unique in that they were able to compare "twin companies" with different ownership structures but with similar market conditions, products and technology. They found that the plywood cooperatives "are somewhat more productive (about 6 to 14 percent) than are other types of firms in the sense that output is predicted to be that much higher when a fixed set of inputs is used in a cooperative firm rather than in a classical or union firm." (Comment by Henry Farber in Craig and Pencavel, 1995:161)

A comparative study of differences between cooperatives and capitalist firms was made by Bartlett et al. (1992). They studied a sample of Italian firms consisting of 49 cooperatives and 35 capitalist firms, and found that the cooperatives had a significantly higher value added per hour than the capitalist firms.

Also when it comes to the stability of employment there is some empirical evidence supporting the idea that cooperatives have a more stable employment level. Craig and Pencavel (1995) found that the output price elasticity for the plywood cooperatives were "considerably lower" than for their capitalist counterparts. In fact, they report that some of the capitalist firms in the sector "have complained of the co-ops' price-insensitive behavior." (Craig and Pencavel, 1995:155) A similar conclusion is made in Pencavel and Craig (1994:739-740): "Above all, cooperatives are inclined to adjust wages in response to a change

in output prices whereas the conventional firms are more likely to adjust employment and work hours." Bartlett et al. (1992) also found that the Italian cooperatives had a higher degree of stability in employment.

Of course all research of this kind must be interpreted with caution. Differences in behavior among capitalist firms and cooperatives might be due to other circumstances than their organizational structure. Then again, none of these papers found that productivity and employment suffered from cooperative organization.

Increased productivity in itself is a good thing. When regarding the financial crisis one could say that the increased productivity levels lead cooperatives to be more viable than capitalist firms. Then again, the evidence for this claim is mixed. In addition, as many economists have pointed out, if worker-owned firms were much more productive we would expect to see more of this kind of firms. Of more interest to our discussion about the financial crisis are the claims about stability in employment. An economy consisting of a larger fraction of cooperatives would not be hit as adversely by a decrease in demand as we have seen in some economies since 2008.

4.4 Obstacles to cooperative organization

Cooperatives today exist and continue to prevail within a capitalist framework. This can in itself be viewed as a proof against those claiming the cooperative model is not viable. On the other hand one could ask why we do not see more cooperatives in the economy, especially in the light of some of the claims about increased productivity in cooperatives. Several scholars have reviewed this issue. Dow (2003:165-206) has a comprehensive survey where he identifies a range of theoretical and practical challenges facing those promoting worker ownership: (1) Capital constraints. There are several reasons why it is problematic for the worker cooperative to acquire the capital needed for production. First, if capital is to be provided by the workers themselves, they might be limited by insufficient wealth amongst workers. This would be especially difficult in capital-intensive industries. Second, if the workers were to find external financing they would face difficulties related to moral hazard and adverse selection. (2) Worker preferences. First, even if the workers have sufficient means to start a cooperative or take over a capitalist firm, they might prefer not to due to risk aversion. Second, some claim that workers' preferences might be more heterogeneous than investors' preferences. This would lead to collective choice problems. (3) Problems related to

asset ownership. First, if the cooperative leases a plant the incentive to properly maintain the production facility might be weaker than if they own it themselves. Second, if the workers own the plant themselves they might face a free-rider problem with respect to maintenance.

Meade (1972) and Craig and Pencavel (1995) also point to the problem with risk-spreading. Neary and Ulph (1997:325) make a distinction between "firm formation" and "firm survival conditional on formation", and assert that the rarity of cooperatives is due to a low formation rate rather than a low survival rate. The main reason mentioned is financing. As with Dow (2003) they observe that "internal financing is difficult" while "external financing is costly".

Another problem for the formation of cooperatives might be the legal framework in which firms operate. For instance, the Basque Country saw a significant increase in the formation of new cooperatives following new legislation passed in 2008. This law changed the minimum amount of people a cooperative could consist of from three to two. (Arri, 2010) Elkar-Lan is a second-degree cooperative set up to help new cooperatives to start up. While they in the five years prior to 2009 helped creating about 40 cooperatives a year, this number increased to 70 in 2009 and 80 in 2010. (Elkar-Lan, 2011:12; Martí-Costa, 2010:184). It should be noted that not all of these cooperatives were worker cooperatives. In 2010 worker cooperatives constituted 74 out of the 80 new cooperatives created with the help from Elkar-Lan. (Elkar-Lan, 2011:12) These numbers must be interpreted with some caution. It could be that there existed many de facto cooperatives consisting of only two persons, which preferred to get registered as a de jure cooperative after the new law.

There might also be other institutional hindrances against the formation of cooperatives. Governments or banks might be discriminatory. For instance, a group of workers trying to start a cooperative in Norway reported that a bank rejected to loan them money for "political reasons" (Lysbakken and Skjerve, 2009). Joshi and Smith (2002) point out that cooperatives are often found in clusters. Some of the reasons they emphasize include the following: First, new workers and managers are more likely to have experience from cooperatives in such clusters, which would also lower training costs. Second, banks are more familiar with cooperatives and will be more likely to grant loans to such firms. Third, there are other cooperative experiences to learn from. Fourth, a cooperative cluster might create a market of specialized suppliers to these firms, like consultants, which again could make it easier to create new cooperatives. And finally, an organized league of cooperatives might make it easier for new cooperatives both to start up and survive once established. (Joshi and

Smith, 2002:5-6) If you want to start a new cooperative in the Basque country for instance, you can turn to a consultant cooperative like Elkar-Lan for advice, or you could file an application to join the Mondragon group.

The financial crisis has led to a rise in unemployment levels and decrease in investment levels. Empirical evidence seems to lend support to the idea that worker cooperatives have a somewhat lower price elasticity and would experience less adverse reactions to demand changes in employment. In this last section I have briefly discussed some of the obstacles to establishing and maintaining cooperatives. As mentioned, Neary and Ulph (1997) claim that it is the formation rate, rather than the survival rate, which is the reason for the modest number of cooperatives in most economies. Considering the possible positive effects cooperatives have on the economy as a whole an advice for policy makers could be to examine whether rules and regulations are discriminatory against cooperative formation.

5 Mondragon Corporation

As of 2009, Mondragon Corporation employs over 85,000 workers in 22 countries all over the world. Its headquarters are situated in a small town in the Basque Country called Mondragon, or Arrasate in the Basque language. Starting out in 1956 with a small workshop making stoves, the company had in 2009 become one of the largest enterprises in Spain, with a total revenue of 15 billion Euros. Its story is about entrepreneurial spirit but also one of social responsibility and solidarity; what makes the group so unique is that it is in fact a worker cooperative, with its workers owning 90 percent of the company. Its success and history has attracted attention from a wide range of economists, social scientists, business people and cooperative protagonists all over the world. In Mondragon's own publications they call its history and development "the cooperative experience".

Mondragon provides us with a unique opportunity to study how a major cooperative reacts to a financial crisis. The Spanish economy has suffered a great deal from the financial crisis, meaning that Mondragon is operating in an unfavorable economic environment at the moment.

To see the Mondragon cooperative in a historical perspective I will start section 5.1 by presenting its history. The section will also deal with how the cooperative is structured, followed by a discussion whether Mondragon represents the democratic cooperative discussed in section 2. In section 5.2 I will perform a qualitative survey of the cooperative's annual reports for the period 1998 to 2009, with the aim at concluding on how Mondragon dealt with the financial crisis.

5.1 "The cooperative experience"

The history of the cooperative

The name Mondragon stems from the Spanish name of the Basque town in which Mondragon Corporation was created. To avoid confusion I will use the Basque name, Arrasate, when writing specifically about the town itself. Arrasate is a small town in the Basque Country situated in a valley and surrounded by high mountains. It has a population of about 22,000 people. Located halfway on the road between Bilbao and San Sebastian, it is in the heart of the Basque province. When preparing for this thesis I went on a field trip to the Basque Country and Arrasate to see how the Mondragon group worked.

It is fairly easy to notice the Mondragon Corporation's presence in Arrasate. Its buildings and factories dominate this small town and it is safe to say it is a typical cornerstone company. The headquarters are situated in the hills high above the rest of the town. It is impossible to avoid the large production plants or the technology research center, and when entering the town you see the large Eroski mall, which is also a part of Mondragon Corporation.

The following narrative is based on the company's own overview of its history (Mondragon Corporation, 2008b). It all started in Arrasate with the arrival of a young Catholic priest in 1941, Father José María Arizmendiarrieta. The Basque Country had suffered a great deal during the Spanish civil war and Arrasate was no exception. His main concern was the welfare of the local citizens, and after just two years in service he started technical study circles for the town's young people. In 1956 Arizmendiarrieta and his students founded the factory Ulgor, which was producing kerosene stoves and heaters. From the early days the focus on education was strong and in 1957 the Escuela Profesional, today known as Mondragón Eskola Politeknikoa, was founded. Finances to run the school came from national, regional and local authorities, as well as from the local citizens and firms. In 1958 the government decided to exclude members of cooperatives from the social security system. This would lead to the creation of Mondragon's own social security system. It is also an interesting fact that Arizmendiarrieta at this point started to encourage women to undertake vocational training. A new course in chemistry was aimed particularly at recruiting women. In 1959 a fundamental step was taken, when the bank Caja Laboral Popular, or Caja Laboral for short, was founded by the then existing cooperatives. The reason for this formation was the lack of finances in the cooperatives. The bank itself is a crossover between a worker cooperative and a firm owned by other cooperatives. The latter have a majority in the bank's board. A firm owned by other cooperatives is often referred to as a second degree cooperative. Caja Laboral was later to become important as a facilitator for Mondragon's expansion and growth.

In the 1960s the cooperative continued its growth and several new plants were created, both in Arrasate and other places in the Basque Country. Spain was economically isolated because of the Franco regime, and the newly created cooperatives faced a growing domestic demand. During this decade the already established cooperatives expanded. New cooperatives were also founded. The opening of a polytechnic school in 1965, occupying 40,000 square meters, mirrored the growth in the industrial cooperatives. The internal welfare system

became an even more important and integral part of the cooperative structures. Caja Laboral decided to create the welfare cooperative Lagun-Aro in 1968, based on the already existing welfare system within the cooperative group. Five local consumer cooperatives were merged into a new cooperative, Eroski, in 1969. By 1970 Mondragon was doing business in a range of sectors, including machine tools, construction, and kitchen appliances. At this point the group had about 9,000 member workers. While the gross national product of Spain had frozen, the cooperative group reported a 14 percent growth in 1971. (Mondragon Corporation, 2008b:18)

The Mondragon group continued its growth in the 1970s, and one of their first large international contracts was landed in Tripoli, Libya, where they built a production plant for welded pipes. Work-hours were reduced to 45 hours a week in 1972, at that time a considerable improvement of working conditions. The new headquarters, symbolically situated in the hillside above the town of Arrasate, were built. As in the sixties, the group continued its growth, both through expansions, creation of new cooperatives and through the inclusion of already existing ones.

The oil crisis that started late 1973 and continued into the following years also reached Mondragon. This constituted a challenge for a series of cooperatives in the Mondragon group. But interestingly the overall net employment in the group actually increased in 1974-75. According to the group's own history writings, this was due to the solidarity principle they operated by: "Solidarity was the key to our strength." (Mondragon Corporation, 2008b:22) By the end of the 1970s Lagun-Aro now provided unemployment benefits and ensured representation of pensioners in the general assembly. They had started to expand globally, for instance through construction projects in South America.

The death of General Franco in 1975 and the democratic reforms undertaken thereafter marked the beginning of a new era for Spain, and especially for the Basque Country. In 1980 the Basque government came into place, marking another step towards democracy in Spain. By the 25th anniversary of the Mondragon group in 1981, Caja Laboral had 114 branches in the Basque Country. Its growth was rendered by the 24 percent growth in customer deposits from the previous year, and also by the considerable growth in industrial and grocery cooperatives from 1980 to 1981. (Mondragon Corporation, 2008b:28) In 1985 the Council of the cooperative group was created. This would mark the beginning of the new superstructure to be known as the Mondragon Cooperative Corporation (Mondragón Corporación Cooperativa), a name that in recent years have been shortened to just Mondragon

Corporation. Differences in wages had always been an important matter in Mondragon, and up until 1986 the maximum wage difference had been 1 to 3. This means the highest paid employee in the group could not earn more than 3 times that of the lowest earner. From 1986 the maximum differences in wages was increased to 1 to 4.5. This will be discussed further later in this section.

In 1987 the first congress of the Mondragon Cooperative Corporation (MCC) was held. The basic principles of what is called the "Cooperative Experience" and the creation of an inter-cooperative solidarity fund were approved. One of the main functions of the fund was to help new cooperatives start up. By the end of the year over 18,000 people were employed in MCC. Large investments in computer technology were made in 1988 through the Ideko Research and Development Center. Spain became a member of the European Union in 1986, and the European single market was soon to be implemented with its removal of tariff barriers within Europe. As with other companies, this constituted challenges, but also new opportunities. Symbols of the considerable growth since its early days include production of engine parts for jet aircrafts, construction contracts in connection to the 1992 Olympic Games in Barcelona, and parts for the Ariane 5 rocket that the European Space Agency built. In 1992 one in every fifteen Euros worth of production in the Basque Country came from a cooperative in the Mondragon group. (Mondragon Corporation, 2008b:39) By 1996 Mondragon employed 30,000 people. The internationalization process in Mondragon continued, and new subsidiaries in countries such the USA, Korea and the UK were opened in 1997. The foreign subsidiaries are in general not organized as traditional cooperatives. In 1998 a new university was created within the group; The Mondragon University, with over 2,400 students.

The period 1998-2000 was a good one for the group in economic terms, as can also be seen in the tables below. The 1998 annual report addresses the internationalization process: "More production plants have been set up abroad and bit by bit our culture is beginning to accept that to operate in many markets it is necessary to have production plants in situ." (Mondragon Corporation, 1999:6) This statement highlights the fact that the internationalization process has not been undertaken without some reservation among the members. One of the basic objectives for the cooperative is creating jobs, and according to the annual report Mondragon's greatest achievement that year was the "creation of 7,732 new jobs" (Mondragon Corporation, 1999:6). 6,891 of these jobs were created in the distribution

group due to “business alliances and opening of new stores” (Mondragon Corporation, 1999:26).

In the year 2000 Mondragon employed 54,000 workers and a new record in investments was made. Meanwhile the focus on research and development continued, and in 2003 there were eleven R&D centers in operation in the group, with a total workforce of 517 people. (Mondragon Corporation, 2008b:50) A project aiming at investing 48 million Euros in a large technology innovation center in Arrasate, the Garaia project, was undertaken. (Mondragon Corporation, 2001:17)

The economic slowdown in 2001 was Mondragon’s first test in the new millennium. The annual report for that year concludes that the economic problems in 2001 showed that Mondragon now was more prepared for an economic crisis than before. The large investments made by the cooperatives and “[…] their firm commitment to internationalisation and innovation” are being credited for this. (Mondragon Corporation, 2002:6) The creation of an innovation council is also being mentioned as an important part of the strategy to ”[…] promote and develop business projects with a high content in terms of technology and innovation.” One of the core projects here is the Garaia project. In addition to this several new cooperatives joined the Mondragon group in 2001, including the large industrial cooperative Ulma Group. (Mondragon Corporation, 2002:7) Ulma was in fact a cooperative formed after a departure from the Mondragon group in 1991. (Dow, 2003:64) This happened after the large organizational changes in Mondragon at that time, but this “solo-experiment” of Ulma only lasted a decade.

The economic difficulties extended into 2002 and the negative effects could be seen in both consumption and investment. Even still Mondragon as a whole thrived with a 14 percent increase in sales and 6,358 new jobs created within the group. (Mondragon Corporation, 2003:8). There was a 16.5 percent increase in turnover in the industrial sector from 2001 to 2002, but it is noted that this is partly due to the newly included cooperatives in 2001. (Mondragon Corporation, 2003:18) The Eroski group now had 29,013 employees. 13,079 of these were worker members. (Mondragon Corporation, 2003:30)

The next years saw positive economic figures again in the world markets. In 2004 the general assembly of Fagor Electrodomésticos, the white goods cooperative, approved a large takeover of the French company Brandt. This decision was met with some controversy, but in the end 83 percent of the members voted in favor of the decision. (Mondragon Corporation, 2008b:53) 2005 saw an increase in the workforce of 7,500 people. A science and technology

plan for the period 2005-2008 was approved in the group, which focused on five prioritized areas: Energy, health, information and communications technology, materials and processes, and business management in the cooperative. (Mondragon Corporation, 2008b:54) In 2008 a scheme to convert the Eroski supermarkets fully into worker cooperatives was made. The most important step was turning the hired employees of the company into worker members. 85,000 people were employed in the Mondragon group by the end of 2009. Mondragon had become one of the largest companies in Spain, and they had 75 plants on four continents. Some 38 percent of the workforce was located in the Basque Country, 45 percent in the rest of Spain, and 17 percent in other countries. (Mondragon Corporation, 2010b:7)

The cooperative structure

Mondragon divides their activities into four main categories: Finance, industry, retail, and knowledge. It is within industry and retails the bulk of people in the group work, while the finance and knowledge areas have important supportive and developmental functions. Mondragon is very much a decentralized organization and there are only about 50 people working in its headquarters. Its functions include such tasks as following up each cooperative's economic performance, coordinating eventual transfers of members between cooperatives, providing guarantees when cooperatives take loans from each other, and facilitating international expansion. (Lezamiz, 2010) Each cooperative has to fulfill certain minimum requirements to become a member of Mondragon. These include some minimum reinvestment levels (15 – 40 percent of surplusses) and contributions to internal funds. Mondragon laws in these matters are stricter than the Basque law. The upside for the participating cooperatives is the opportunity to take part in the security the Mondragon system provides. One such advantage is that Mondragon covers half of the losses in times of trouble. (Lezamiz, 2010)

When it comes to membership the routine varies between cooperatives in the group. It is common with a trial period before one is allowed to become a member. In several cooperatives people have been working on normal contracts for years before they become members. Each member must pay a fee to join the cooperative. A typical amount is corresponding to a year's minimum salary. The membership fee can be paid over a period of up to three years. (Lezamiz, 2010) Members do not get wages but what is called "anticipos", a monthly down-payment on the expected dividend each member is entitled to. In extreme

situations it is of course a possibility that the paid "anticipos" exceed the dividend at the end of the year. This is not a common problem though. 20 percent of the membership fee goes to a common fund while the rest is put aside on a personal savings account. (Lezamiz, 2010) To become a member of one of the cooperatives one is often subject to a screening process. It is not only work skills that are evaluated in this process, but also the potential member's "social integration into the community". A typical trial period is about 6 months. (Dow, 2003:59) It became apparent when I was visiting one of the Fagor factories producing domestic appliances, that everyday working life is not very different in a Mondragon cooperative from a capitalist firms. A job at the assembly line will be a job at the assembly line. Not surprisingly, the focus on productivity and efficiency was strong.

Even still, the entire Mondragon group is built up as a democratic organization, and the "one person, one vote" rule applies for the members. On the cooperative level the General Assembly is on the top of the democratic structure. The General Assembly comes together at least once a year. It decides the business plan, votes on mergers and acquisitions and allocates earnings. Although it is usually the management that calls the meetings, it is possible for workers to collect signatures and demand an extraordinary general assembly if they find it necessary. (Kasmir, 1996:37) The Governing Council is elected at these meetings, which functions as the board in the cooperative. In addition there is a Monitoring Committee in each cooperative, with a mission to uphold "transparency in management", and the Social Council, also elected by the workers, is the workers' standing body for participation in management. (Mondragon Corporation, 2010a:53)

Considering the Mondragon group structure the upper level body is the Congress, which assembles every two years. It consists of 350 members elected from the member cooperatives in proportion to each cooperative's size. (Dow, 2003:63) The elected Standing Committee approves overall strategies and goals, while the General Council is Mondragon's "executive body for management and coordination". (Mondragon Corporation, 2010a:52)

The industry area in the Mondragon group had a workforce of about 36,500 in 2009, with a membership rate of 89.5 percent. Its cooperatives produce consumer goods, capital goods, industrial components, construction, and business services. Gross turnover for the industry area was over 5,300 million Euros in 2009. (Mondragon Corporation, 2010a) The bulk of the cooperatives are situated in the Basque Country and the rest of Spain, but with 75 production plants and 9 corporate offices abroad, Mondragon also has a strong international presence. The plants are found 22 different countries, like the United States (2 plants),

Mexico (7), Brazil (5), France (9), Poland (8) and China (13) (Mondragon Corporation, 2010b:7).

Within the finance area the most important units are the bank Caja Laboral and the welfare division in Lagun-Aro. There is also an insurance company called Seguros Lagun-Aro within this area of operations. Caja Laboral works as both a normal bank and as a service provider for cooperatives, both existing and new ones. This includes an entrepreneurial division, which helps create new cooperatives. This is maybe one of the most important tasks within the bank and also a key to Mondragon's success. The entrepreneurial division helped facilitate 80 percent of the cooperatives in the Mondragon group (Lezamiz, 2010).

All cooperatives in the Mondragon group have a pooling of profits, where means may be transferred to cooperatives that have suffered losses in a particular year. Funds with different functions have been set up over the years, the inter-cooperation funds. These include the Central Inter-cooperation Fund (financing development and internationalization projects), the Education and Inter-cooperative Promotion Fund (financing the Education and Technology centers), the Corporate Solidarity Fund (the system for offsetting losses in the cooperatives), and the Employment Aid Fund (providing unemployment benefits for members that are unemployed from structural causes). (Mondragon Corporation, 2010a:59) When specific tasks are lost within a cooperative worker members can be reallocated to other cooperatives. Those members that cannot be placed in another cooperative receive support from the employment fund. The fund does not work as unemployment insurance but is used to support members in a transitional period. With the exception of 2009 spending from the fund has been moderate.

Along with the industry area, it is the retail area that employs the most people within Mondragon. The largest cooperative in this area is Eroski, a supermarket chain with about 2300 outlets. (Mondragon Corporation, 2010b:23) Eroski is a mix between a consumer cooperative and a worker cooperative. According to the last available numbers, from 2005, a third of their workers were members. About half a million people were consumer members in 2001 (Mondragon Corporation, 2002:28). In 2009 about 53,100 workers supplied 44,700 work years.

The fourth area in Mondragon is knowledge. This covers education, innovation, and research and development (R&D). The Mondragon University enrolled 3,100 students with almost 400 postgraduates in 2009. Their degrees range from engineering and business sciences to humanities and education science. Cooperation with Mondragon cooperatives is

close and entrepreneurship is an important area. Besides the university the polytechnic school has just below 400 students and offers vocational education, focusing on the needs of the local job market. (Mondragon Corporation, 2010a:42) Research and development is a vital part of the cooperatives' strategy and there are 12 technology centers and R&D units in the Mondragon group. They have a total of 742 people employed with a combined budget of 54 million Euros. A newly created innovation center, the Garaia Innovation Park, is now fully operational and has a total turnover of 30 million Euros. Finally it should be mentioned that there is a management training center in the group called Otalora.

How democratic is Mondragon?

A question that quickly arises is whether the Mondragon model is truly a democratic one. Is it the answer to the idea about economic democracy as described in section 2? The Mondragon group was created as an answer to a crisis caused by the economic and political situation in the area. Its founders were well aware about the potential that lies in promoting education and economic development in the local community. Father Arizmendiarrieta was well known for having clear and vivid ideas about the importance of democracy and empowerment of people in the area. (Kasmir, 1996) The success in Mondragon's first decades can be connected to the isolation of Spain during the Franco years, where the cooperative grew on the basis of import substitution. But this explanation does not apply to the period after Spain joined the European single market. When Ulma singled out from Mondragon in 1991, this was a consequence of the restructuring of Mondragon. This was in its turn a response to the new situation after Spain became a member of the European Union. The story about Ulma is clear evidence that not everyone was satisfied with the new version of Mondragon. Then again, Ulma rejoined Mondragon in 2001.

One possible interpretation of this process is that increasing international trade is at odds with the possibility for democratic economic firms at the local level. But this is a too simplistic interpretation. First of all Mondragon still exists and the group has thrived also within the European single market. Its structure is in its nature a democratic one where its workers elect boards and leaders. This is in stark contrast to most international companies, and it has some important implications. One of them is that it would be impossible to simply eliminate local workplaces by moving production out of the country. Although Mondragon has a growing numbers of plants abroad, they are at the same time investing a considerable amount in education and R&D locally. This strategy so far seems to be working in terms of

workplaces. In 2005 Mondragon decided to create a development center to create new high skill activities locally. The purpose was to meet the challenges that "[…] may be posed by the globalisation process." (Mondragon Corporation, 2006:7) In the field of research, training, and education a new science and technology plan for the period 2005-2008 was implemented with a budget of 40.7 million Euros. (Mondragon Corporation, 2006:38)

Secondly, internal opposition is not something new in the group. In 1974 there was a strike in Ulgor, at that time the largest cooperative in Mondragon. The strike also spread to Fagor. The background is complex but the explanations for this include the very size of the cooperative, which led to distance and tensions between management and workers. (Kasmir, 1996:110-113) The reorganization process prior to the strike reinforced class tensions and a sentiment that the cooperative "[valued] mental work over manual work" (Kasmir, 1996:111). Kasmir (1996) points out that there is often a difference between workers and management in to which extent ideology is important. While many workers considers Mondragon as "just" a workplace, and are not necessarily interested in taking part in the democratic processes, the ideological factor is more important among leaders.

According to Kasmir many scholars have made "Mondragón into an imaginary place where social class has disappeared." *(*Kasmir, 1996:16) This had formed her expectations prior to her studies of Mondragon:

"I found that the cooperatives looked quite different from [the working class] perspective than the literature had led me to believe: There was considerable discontent among co-op workers; they perceived class inequalities in a system that was supposed to have eradicated class; and they felt they had little control over their work lives yet were largely uninterested in exercising the rights to which they were formally entitled." (Kasmir, 1996:17)

Immediately it can be asserted that Kasmir's utopians is hard to find in the economic literature, and I have not come across such reformers presenting Mondragon as a something close to a mythical institution. Quite the opposite, case studies of Mondragon focus on testable data and have a critical view of the cooperatives. When visiting Mondragon I also learned that it was important for the people inside the cooperative to emphasize that this is not some kind of ideological experiment but a business model.

In the democracy perspective it is also interesting to note that the egalitarian focus has been strong within the group. As mentioned, up until 1986 the rule was that the highest income in the group could not be more than three times higher than the lowest income. This was increased to 4,5. Today the wage differences has increased even further. Within Caja Laboral there are people earning about 8 times the income of the lowest paid worker in

Mondragon. The CEO of Mondragon was paid at a factor of 9. (Lezamiz, 2010) Then again, this is still quite egalitarian compared to the average large companies in Europe and the wage within Mondragon is still compressed. Research indicates that the lowest paid workers get paid slightly more in Mondragon than in comparable jobs in other firms, while highly skilled workers and managers get paid less. (Dow, 2003:60)

Some critical remarks about worker-democracy in Mondragon can be made on the basis of the annual reports. The first point is regarding the way in which the members' opinions are incorporated in the company. One would expect that in a worker democracy the organizational structures would suffice to involve the workers in issues like how everyday production is organized and the overarching goals of the cooperative. But, for instance, the 1998 report presents that a general "measurement of workers' satisfaction" has been undertaken that year. This is not very different from how we would expect a capitalist firm to handle workers' participation. On the other hand schemes to increase worker membership are often made, and within Eroski, the supermarket cooperative, they implemented a democratization scheme that included 1,300 workers in 1998. This is justified by the principles of participation within the cooperative, but it is also emphasized that this is "a is a business value that has a direct effect on the level of quality and customer satisfaction." (Mondragon Corporation, 1999:27) Hence worker democracy is not only a goal in itself, but it is often highlighted that this also has positive effects for profitability.

The 1998 and 1999 annual reports use the header "worker participation" to sum up the achievement of goals the last year. This header was replaced by "Social concerns" from the 2000 report an onwards. This might be read as a departure from the strong focus on worker participation. Another development that points to similar problems in the annual reports is the conclusions from the worker satisfaction survey. One of the measures taken was to "transmit the best practices from one business centre to another" (Mondragon Corporation, 2000:10). The transmission of best practices to other cooperatives, a top-down way of implementing new routines, is bound to collide with local democratic bottom-up processes, at least in some aspects. This is further illustrated by the mention of "a method for the Deployment of Objectives" in the industrial area, which was developed in cooperation with a university and a consultant company. The goal was to "enable the objectives established for the different levels of the organisation to be aligned with the strategies of the Business Unit." Other measures that are mentioned in the annual reports include improvements in management teams, improvements in internal communications, the implementation of environmental

management systems, a survey "to assess people satisfaction", and an increase in the number of member workers by 1,582 people compared to the previous year. (Mondragon Corporation, 2000:17) With the exception of the increase in member workers, there is really nothing in the annual report that points towards a deepening of democratic practices.

Lastly a mention about Mondragon's international presence should be made. Although schemes to increase the membership ratio are implemented from time to time, these are exclusively aimed at the domestic companies. This means that Mondragon members to some extent also are capitalist shareholders, in that they have stakes in international firms. They have ethic rules about worker conditions and environmental policies for their subsidiaries, but so do a lot of other international funds. In a PhD-thesis Monasterio (2008) writes about the dilemma the international expansion entails. He performs econometric tests to see how the internationalization process affects the local cooperatives. He found a purely descriptive positive relationship between cooperatives with foreign subsidiaries and the number of local jobs created. But the hypothesis that such foreign direct investments entailed "greater net job growth at the parent co-operative during the three years after the start of the [foreign direct investment]" was rejected. In his words, "[t]he evolution of employment at the global co-ops reveals how it is increasingly difficult to generate jobs of an industrial nature at the parent co-op" (Monasterio, 2008:195). This claim is worrying for the future of the cooperative organization of Mondragon.

In the above I have highlighted certain potential problems regarding democracy and worker participation. In every organization it is a potential danger that the management is professionalized to a point where meaningful participation by the common member is made difficult. At the same time this can be met by training in democratic participation in the workplace, which Mondragon to some extent does. But democracy might also lead to inefficiencies, which in a worst-case scenario could make a cooperative go out of business. This balancing between interests is a difficult exercise. In my opinion Mondragon is clearly a democratic company, but as within other democracies there is always room for improvement. Then again, the international expansion could be a symptom of a worrying development for the creation of local jobs. This could severely threaten "the cooperative experience".

5.2 Reactions to the crisis

The financial crisis late 2008 led to a sharp increase in the unemployment rate in the Basque Country. While the unemployment for people above the age of 15 was 6.4 percent in 2008, it reached 11.0 percent in 2009. For youths between 15 and 24 the unemployment rate went from 19.2 percent in 2008 to 31.5 percent in 2009. (Eurostat, 2011e) The gross domestic product (GDP) for the same region was reduced by 3.5 percent in 2009. For 2007 and 2008 the GDP grew with 3.9 and 1.6 percent, respectively. (Eurostat, 2011c) The numbers clearly illustrate the crisis hitting the Basque Country along with the rest of Europe. In this climate the capitalist firm reacts by reducing investment and employment. Investments are reduced because of uncertainty about the future, but also because of the more limited access to capital in a finance market suffering under the credit crunch. Reduced demand leads to reduced production and employment levels.

All of the mechanisms at work here are well-known and expected for capitalist firms. But how does the cooperative react in this situation? From the discussions in the sections above we have certain expectations. First, investments will fall, as with the capitalist firms. The cooperative operates in the same market as the capitalist firm, and there is no reason for cooperatives to be more optimistic about future sales than the capitalist firms are. Furthermore, if the cooperative is dependent on external financing to go through with an investment, they will also face problems in the credit market. Secondly, we expect the employment to be more stable in the cooperative than in the capitalist firm. The cooperative cannot simply expel its members the same way as a capitalist firm can lay off its workers. Instead we should expect that a cooperative explore the possibility of a reduction in wages. From the history of Mondragon we have seen that despite previous crisis they have grown steadily. On the other hand, they operated in a quite closed economy in their early decades, which shielded them to some extent.

The annual report for 2009 states that the year represented “one of the fiercest challenges [Mondragon has] ever had to face, as it has required major efforts to cope with the year’s demands whilst at the same time readying the Corporation to face the competitive requirements that lie in wait ahead.” The “solidarity and inter-cooperation” between the cooperatives in the Mondragon group is accentuated as an important way of getting through the crisis. (Mondragon Corporation, 2010a:7)

The question now is what lies behind these statements. To answer this I have collected available data from the annual reports in the period 1998 to 2009 (Mondragon Corporation,

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008a, 2009, 2010a). At the time this is written the 2010 annual report is not yet released. It must be said that there is some lack of consistency in what is reported each year, for instance when it comes to membership ratio and dividend payments. When it comes to employment numbers the annual reports are sometimes a bit unclear on whether the numbers are headcounts or work years. This is especially important in the retail area, where a relative large portion of the workforce have part time jobs. Despite these challenges it is still possible to see some interesting patterns in the available material.

To get a picture of the Mondragon group as a whole I start out with the key numbers for the entire cooperative group. In Table 1 we can see the considerable growth in the group over the years, both in terms of employment and in economic measures. From 1996 to 2007 the workforce was tripled, from 31,963 to 93,841. This period was hallmarked by a steady growth in sales, investments and results.

When the financial crisis came about in 2008, investments were hit particularly hard. For the group the investments went down from 2,809 million Euros in 2007 to 378 million in 2009, a drop of 86.5 percent. This is no doubt a dramatic reduction. If we compare the investment levels in 2009 with the earlier investment levels, we see that we have to go back to 1997 to find equally low figures measured in absolute numbers. But two things should be noted. First of all, the figures are not adjusted for inflation. The numbers for 1996 are with 1996 prices. A rough estimate tells us that in 2009 value, the 1996 investment level corresponds to about 364 million Euros. (Based on the average inflation rate of 2.2 percent in the Euro area in the period 2000-2010. (Eurostat, 2011b))

Table 1 – Key numbers for Mondragon Corporation

	Workforce[1]	Total turnover[2]	Investment[3]	Results[4]	Inter-cooperation fund holdings[5]	Worker ownership[6]
1996	31,963	3,786	271	216		
1997	34,397	4,368	378	314		
1998	42,129	5,348	425	414		
1999	46,861	6,274	522	362		
2000	53,377	7,065	738	367		
2001	60,200	8,106	872	335		
2002	66,558	9,232	683	370		
2003	68,260	9,655	847	410	35	
2004	70,884	10,459	730	502	42	
2005	78,455	11,859	866	545	52	90.5 %
2006	83,601	13,390	1,243	677	59	91.9 %
2007	93,841	15,056	2,809	792	67	91.4 %
2008	92,773	15,584	1,324	71	72	92.3 %
2009	85,066	13,819	378	61	38	92.6 %

Monetary figures are measured in million Euros and are not adjusted to current prices. Figures for 1996 and 1997 are from the 1998 annual report.

1) *Workforce in the whole group measured in work-years.*
2) *Total turnover, domestic and abroad, for the industry and retail area.*
3) *Total investment for the entire group.*
4) *Consolidated earnings for the entire group.*
5) *Measure of the size of the fund. The inter-cooperation funds include the Central Inter-cooperation Fund, the Education and Inter-cooperative Promotion Fund, the Corporate Solidarity Fund, and the Employment Aid Fund. (Mondragon Corporation, 2010a:59)*
6) *Worker-ownership measured by share-capital held by worker-members.*

In addition to this, the investment levels relative to the size of the group are much lower in 2009 than any surveyed year before. Compared to, for instance, total turnover the investment ratio in 1996 was at 7.1 percent. In 2007 it had reached 18.7 percent, while in 2009 it was at a 2.7 percent level.

When we split the numbers up for different areas of operation we see how different parts of Mondragon were affected by the crisis. Some figures for the industry area are found in Table 2. This area is often of special interest when studying economic downturns, since it consists of sectors that are usually hit hard during crises. As mentioned above, the "industry area" label in the annual reports covers the production of consumer goods, capital goods, industrial components, as well as construction, and business services. We see that the drop in investment from 2008 to 2009 is 43.1 percent, from 571 million Euros to 325. As can be seen in Table 3, the retail area was hit even worse. From 2,234 million Euros in 2007 the investment level dropped to minus 14 million Euros in 2009. This is more than a 100 percent decrease. It should be noted though that 2007 saw a particularly high level of investment. This was mainly due to the acquisition of the retail chain Caprabo. Even still, the investment level is well below the yearly average since 1997.

Considering employment the economic crisis clearly had an effect on Mondragon as well. From 2007 to 2009 the total workforce was reduced by 9.4 percent, from 93,841 to 85,066 (table 1). As can be seen in table 2, the industrial area was hit particularly hard. The reduction from 44,280 in 2007 to 36,493 in 2009 represents a 17.6 percent decrease in the workforce. In the same period the retail area only saw a reduction of 2.5 percent, from 45,848 work-years to 44,695 (Table 3). The employment level in 2008 was higher than the years before and after. This might be due to some delay in the reduction in demand in the retail sector, compared to the industrial sector.

At first sight the reduction in employment does not meet our expectations about cooperative behavior. The significant fall in industrial employment is especially startling. But not all workers in Mondragon are members. A large portion is hired on normal wage contracts.

Table 2 – Industry area

	Gross turnover[1]	International sales[2]	Total investments[3]	Workforce[4]	Plants abroad[5]
1996	1,754	777	106	17,356	
1997	2,067	938	155	18,797	
1998	2,353	1,104	189	19,585	
1999	2,693	1,283	214	21,913	
2000	3,170	1,568	294	25,593	
2001	3,475	1,769	282	27,050	
2002	4,049	2,058	378	31,166	
2003	4,379	2,152	312	32,597	38
2004	4,792	2,358	345	33,640	48
2005	5,760	3,136	528	40,121	57
2006	6,876	3,896	594	42,167	65
2007	7,439	4,230	504	44,280	69
2008	6,511	3,791	571	40,822	73
2009	5,341	3,172	325	36,493	75

Monetary figures are measured in million Euros and are not adjusted to current prices.

1) *Gross turnover in the entire industry area combined, including foreign subsidiaries.*
2) *Includes both export and sales made by foreign entities.*
3) *Total investments for the industry area.*
4) *Total workforce in industry area, both members and hired workers.*
5) *Number of plants abroad.*

Table 3 – Retail Area

	Total sales[1]	Investments	Work years	Worker owners[2]	Headcount[3]
1997	2,300	199			13,291
1998	2,995	217			20,182
1999	3,581	279			22,324
2000	3,895	416			25,008
2001	4,631	563			30,158
2002	5,182	274		13,079	32,036
2003	5,276	515		13,079	32,222
2004	5,667	360		12,298	33,782
2005	6,099	302		12,721	*34,729*
2006	6,514	618	36,400		*37,538*
2007	7,618	2,234	45,848		*56,533*
2008	9,073	708	48,051		*57,557*
2009	8,478	-14	44,695		*53,143*

Monetary figures are measured in million Euros and are not adjusted to current prices.

1) *Total sales. The retail/supermarket chain Eroski is dominating the numbers here.*
2) *Worker-owners. Headcount of worker-members in the area. Unfortunately only reported in the period 2002-2005.*
3) *The distinction between headcount and work-years is due to part-time jobs in the supermarkets.*

In Table 4 I have gathered the available information about membership in Mondragon for the period. The overall membership ratio is available for the period 2003 to 2006, while the membership ratios for the industrial area are available from 2006 to 2009. The overall membership ratio was stable at around 80 percent for the group as a whole from 2003 to 2006. Also in the industrial area the membership ratio was around this level for 2006 and 2007.

We see that after the financial crisis hit, the membership ratio in the domestic industrial area increases from an 80.9 percent ration in 2007 to an 89.5 percent ratio in 2009.

Table 4 – Employment and membership

	Total employment	Percentage members[1]	Percentage members, industrial area[2]	Employment abroad
2003		80.4 %		8,087
2004	70,884	81.1 %		8,496
2005	78,455	81.0 %		14,205
2006	83,601	80.0 %	81.7 %	15,754
2007	93,841		80.9 %	16,580
2008	92,773		83.0 %	14,938
2009	85,066		89.5 %	14,506

Monetary figures are measured in million Euros and are not adjusted to current prices.

1) *In the annual reports the numbers are reported as "percentage of members in the workforces of MCC cooperatives". Although not explicitly stated, I assume these numbers to be relevant for domestic companies only.*
2) *In the annual reports the numbers are reported as "percentage of members over the headcount for the cooperatives in the Industry Area". Although not explicitly stated, I assume these numbers to be relevant for domestic companies only.*

As can be seen in Table 4, the workforce abroad was reduced by 12.5 percent from 2007 to 2009. The largest adjustment in employment abroad was done between 2007 and 2008. If we consider only the change between 2008 and 2009, we see that employment abroad went down by around 400 people. Employment in total however was reduced by 7,700 people, with a reduction of 4,300 people in the industrial area alone. At the same time the membership ratio increased by 5.1 percentage points, from 83.0 to 88.1 percent. In other words, it was the non-member workers that lost their jobs.

People I talked to in Arrasate supported this observation. One person told me "they fired everyone that was not a member". Although this should not be interpreted literally, it illustrates a sentiment among the locals in Arrasate. At the same time, hired workers were not the only ones that got affected by this situation, but the members enjoyed a job security that the hired members did not. In the last six months of 2009 about 550 people were reallocated to new cooperatives within the group. (Lezamiz, 2010) This reallocation of labor would

probably have been more difficult in a smaller cooperative. For Mondragon and its members the financial crisis constituted a test on the cooperative system and its flexibility. The size of Mondragon was an advantage in this respect.

Not all members could fill new functions within the group. Some members also found themselves without a job after the crisis. But this does not mean they lost their income. As can be seen from Table 1 spending from the inter-cooperation fund rose considerably from 2007 to 2009. This is mainly due to the increased spending through the Employment fund. This is used to "finance situations of unemployment of a transitory or structural nature that affect the members of the cooperatives." (Mondragon Corporation, 2008a:60) The difficult situation can also be seen in Table 5, show the reported figures for Lagun-Aro, the social welfare division in Mondragon. The table clearly shows an increase in the payments of unemployment benefits.

When it comes to the issue of income reduction, some evidence can be found in Table 6. The changes from 2008 to 2009 are not dramatic but we might get a glimpse of a certain pattern. The portion of workers earning less than 2 times the minimum income increased from 62 percent of the workers in 2008 to 67 percent in 2009. This indicates an income reduction throughout the entire group. As mentioned, member-workers in Mondragon are not paid wages per se but dividends, or "anticipos" as it is called in Arrasate. The workers' income reduction is therefore not something that has to be decided; instead the payment system leads to an "automatic" reduction in the workers' income when the economic situation is difficult. The advantage for the members is the stability in employment, but the downside is of course the inherent instability in wages. This "security in employment but insecurity in income" is in many ways the opposite of how the capitalist firm works.

In the annual report for 2009 the advantages of being organized as a cooperative in a crisis is highlighted, as it claims that a significant contribution for getting through the financial crisis "has been made by the flexibility inherent to our cooperative status and by the responsibility with which the collective of cooperative members has accepted the efforts and sacrifices required in a situation of such adversity as that experienced last year." (Mondragon Corporation, 2010a:16)

What can be learned from Mondraon's adjustment to the financial crisis? We have seen that both investment levels and employment have suffered in Mondragon since 2007, as is the case in most capitalist firms. In this respect, the results in Mondragon may not be particularly impressing. Then again, when considering the cooperative members, we see that

they enjoy a high degree of security in employment. Thousands of people in the Basque Country and Spain have relative secure jobs as worker-members in a cooperative. This again presumably is a stabilizing factor in the communities where these people live.

Table 5 – Lagun-Aro

	Employment benefit	Temporary sick-leave	Health care	Total	Members in Lagun-Aro[1]
2006	3.1	32.8	18.0	58.2	29,858
2007	3.2	33.8	19.3	62.0	30,476
2008	7.4	34.5	12.7	61.0	31,393
2009	23.2	36.7	11.5	78.0	30,757

Monetary figures are measured in million Euros and are not adjusted to current prices.

1) *Membership is voluntarily and complements the state-run social welfare system in the areas of health care, temporarily sick leave and unemployment benefits.*

Table 6 – Wage distribution

	2005	2006	2007	2008	2009
≤1.19	17 %	16 %	16 %	17 %	18 %
1.20-1.49	12 %	13 %	14 %	12 %	14 %
1.50-1.99	35 %	34 %	34 %	33 %	35 %
2.00-2.49	21 %	22 %	21 %	22 %	19 %
2.50-3.49	12 %	12 %	12 %	12 %	11 %
≥3.50	3 %	3 %	3 %	3 %	3 %

Wage distribution calculated with the lowest wage as the base unit, evaluated at factor 1. In other words the group "2.00-2.49" earns from 2 to 2.49 times as much as the one with the lowest income in the group.

6 Conclusions

The purpose of this thesis has been to perform a survey of the relevant literature on cooperatives and see whether some conclusions could be drawn about the viability of cooperatives, how they react to crisis and how the economy would be affected by a larger fraction of firms being cooperatives. In section 2 we have seen that equality and egalitarian values are at the core of the way cooperatives function. The ideal cooperative is a firm fully owned by its workers, and owner-shares are equally distributed among them. This leads to a "one person one vote" system where the workers fully control the firm. Even though some deviations from this must be expected, the value of egalitarianism will function as a driving force towards the ideal-type cooperative. In section 3 we saw that egalitarian ideas are inherent parts of the cooperative theory. Claims made about the stability in cooperatives' employment levels are in itself a reason to pursue further knowledge about the cooperatives. In section 4 the scholarly dispute about how to model the cooperative was treated. In combination with the empirical research performed on the subject it is safe to claim that the Illyrian model, with its maximization of average income per worker, does not help us understand the cooperative. By introducing a market for membership, it was shown that the cooperative would adjust labor input in the same way as the profit-maximizing firm. There is some empirical support for the claim that employment levels in cooperatives are less volatile. Instead of firing workers, the cooperative adjusts wages downwards.

Empirical and theoretical research shows that cooperatives can indeed be a viable alternative to capitalist firms. The model from section 4.2 of a labor-managed firm with a market for membership showed that there is nothing inherent about the cooperative that leads to market failures like the ones demonstrated by the Illyrian firm in section 4.1. Once established, cooperatives seem to be a stable firm type. But research suggests that there are some hindrances to the formation of cooperatives. These span from free-rider problems to capital constraints, as discussed in section 4.4. The financial crisis, or credit crunch, has shown to have large consequences for the possibility of attracting capital to entrepreneurial projects. This is exacerbating the problems that cooperatives have in attracting capital. These issues need to be further examined so we can increase our understanding of the specific challenges cooperatives face.

Although Mondragon has existed since the 1950s, the financial crisis in 2008 might have been the worst crisis in their history. The strength of the group lies in the diversity of

their operations and their size. Mondragon is normally not in need of external financing, and in times of need they will probably not face the same problems getting loans as most cooperatives.

Mondragon is a cooperative in the sense that it is fully worker-owned and that the "one person one vote" is followed for its members. They deviate from the ideal-type of a cooperative in the sense that they have a large fraction of non-member workers. In addition they have a number of subsidiaries abroad that are not organized as cooperatives. Foreign subsidiaries might add to the overall earnings of the cooperative group, but it does not necessarily lead to the dissemination of the cooperative idea. In this sense the domestic worker-members of Mondragon might be described as capitalist owners.

From the qualitative survey of the annual reports we saw that both investment and employment levels fell as a result of the financial crisis. But we also learned that the members of the cooperative enjoy a high degree of security in employment, although to some extent offset by insecurity in income. This is the opposite of what is the case in capitalist firms, where the workers have security in wages, but insecurity in employment. The risk-averse worker would prefer security in employment. This is even more so in the event of a financial crisis, where a job-loss would entail having to find a new job in a tougher labor market. In a capitalist firm it is not easy for employees and management to agree on wage reductions because of the credibility problem. A cooperative like Mondragon does not have this problem vis-à-vis its members. Whether Mondragon has similar credibility problems towards its hired workers is unclear. Above it is discussed that a capitalist firm have to fire workers to signal the seriousness of a crisis. In Mondragon this kind of signal might be replaced with an observation of the members' dividends. In that case employment stability for hired workers might approve as well.

We also see that Mondragon has some serious challenges with regards to the international expansion and their relatively high ratio of hired workers compared to members. Although the membership ratio is higher at the moment, this is mainly due to the fact that many workers were laid off after the financial crisis. When considered as groups, the difference in rights between members and hired workers in Mondragon is large. The financial crisis showed that Mondragon reacted towards its hired workers in similar ways as a normal capitalist firm would have done. The "worker-capitalistic" feature, as illustrated in Figure 2 in section 2, of Mondragon is apparent in more than just the measured membership ratio: It has

consequences for how the cooperative perform business. This is further illustrated by the foreign subsidiaries.

When it comes to investment levels, the cooperatives do not seem to be more willing to invest during a financial crisis than capitalist firms. This was as expected. The cooperatives operate in the same markets as the capitalist firms and they have no reason to be more optimistic about future earnings than their capitalist counterparts. Even if they were willing to undertake large investments, they might not have the financial means to do so. First of all, the earnings in cooperatives will naturally fall during a financial crisis. Secondly, even though cooperatives might have good relations to investment banks, the capital market will be equally difficult for cooperatives as for other firms.

Mondragon was able to provide secure workplaces for their members during the financial crisis. This was as expected from the research discussed in section 4. In this respect, an economy consisting of more cooperatives would see a higher degree of stability in employment. This would again dampen the fall in consumer demand and contribute to breaking the vicious cycle of financial crises.

Although conclusions derived from empirical evidence on cooperative performance are diverse, I have not found any studies suggesting that employment levels and productivity is negatively affected if production happens within cooperatives. Considering the potential positive effects, governments should at least make sure that institutional obstacles do not hinder cooperative formation.

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Appendix

1: Calculus in section 4

The firm has one output F and one variable input L. A fixed cost B applies. Prices are denoted by p. F is increasing and strictly concave. Members will adjust so as to maximize average income per worker, y.

$$\max_{L} y = \frac{pF(L) - B}{L} \tag{1}$$

Taking differentials with respect to L, the first order condition becomes:

$$\frac{pF'(L)\cdot L - pF(L) + B}{L^2} = 0 \tag{2}$$

And solving for F'(L):

$$F'(L) = \frac{F(L) - B/p}{L} \tag{3}$$

From this we can see that $\partial L/\partial p < 0$ and $\partial L/\partial B > 0$. The result hinges on F being strictly concave. Miyazaki and Neary (1983) explain why this must be true by splitting up the effect on labor from a price increase into two parts: A pure price effect and a fixed cost effect. The utility of labor, u, is introduced with the usual assumptions: u' > 0 and u'' < 0. The splitting up of the price effect is analog to the Slutsky decomposition where the pure price effect corresponds to the substitution effect and fixed-cost term corresponds to the income effect. (Miyazaki and Neary, 1983:260) The workers will want to maximize utility in the following way:

$$\max_{y,L} u(y) \text{ subject to } pF(L) - yL \geq R,$$

where R is income. The pure price effect is denoted $\left[\partial L/\partial p\right]_u$ and the fixed-cost effect is denoted $\left[\partial L/\partial R\right]_p$. According to Miyazaki and Neary it can be shown that these effects are both positive. For a strictly concave production function the fixed cost effect will outweigh the pure price effect:

$$\partial L/\partial p = \left[\partial L/\partial P\right]_u - F(L)\left[\partial L/\partial R\right]_p < 0$$

Equation (1) can be modified for the case where the leaving members receive compensation:

$$y = \frac{pF(L) - B - (n - L)\alpha}{L}, \tag{4}$$

where (n-L) is the number of members that have to leave the firm. The first order condition becomes

$$y' = \frac{(pF'(L) + \alpha)L - (pF(L) - B - n\alpha + L\alpha)}{L^2} = 0$$

$$\frac{pF'(L)\cdot L - pF(L) + B + n\alpha}{L^2} = 0 \tag{5}$$

Solving for F'(L) to get

$$F'(L) = \frac{F(L) - \frac{B + n\alpha}{p}}{L} \tag{6}$$

2: A reproduction of Ward's Illyrian firm

This reproduction is for reference. It must be noted that the notation is a bit different from what is used in the rest of the thesis.

The modeled Illyrian firm operates in a similar market without any state intervention. There is no minimum wage and the workers freely choose firm policies within a purely competitive market. The workers are interested in maximizing their average individual incomes. Ward starts out by considering a firm with one output and one variable input, namely labor. Labor is a homogenous input and the plant is fixed and owned by the state. The firm must pay a tax for using the state-owned plant and wages w. Other taxes are ignored. The state sets the level on w, but this is done to provide an accounting definition of labor cost and does not determine the de facto wage level. Eventual profits will always be distributed as wage bonuses among the workers, which in this case will be equal among our homogenous type workers. The marginal product of labor is assumed to be positive but declining as output increases. Labor input is measured by number of people employed. The production function then describes output y in terms of labor x:

$$y = f(x) \tag{1}$$

In this model the employment level is set only with the objective of maximizing income per worker within the firm, even if that means that some of the existing workers face

unemployment. The workers as a group then seek to maximize average income per worker (S), with regards to wage (w), profits (π) and number of people employed.

$$S = w + \frac{\pi}{x} \tag{2}$$

Ward (1958) divides the last term in (1) into two parts: Average profits per worker consists of the difference between average revenue per worker, U, and average cost per worker, K. The firm then choose to maximize the positive difference between these two. This will be at a level where

$$dU/dy = dK/dy \tag{3}$$

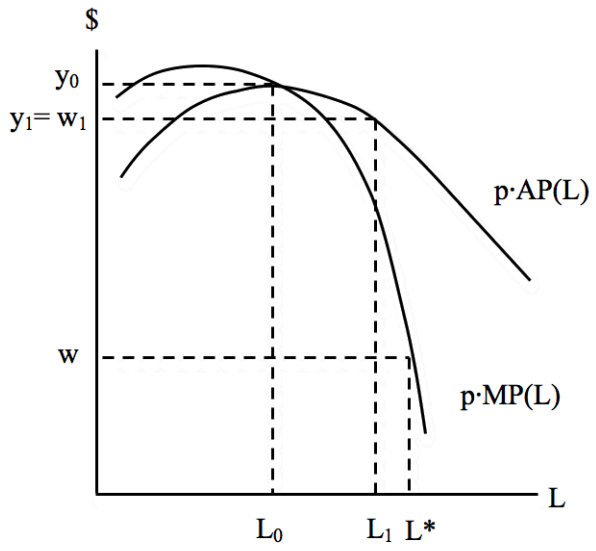
Ward (1958:572) writes:

"[T]his is the Illyrian equivalent of the capitalist condition that price will equal marginal cost under rational management […]. The Illyrian condition states that wages per worker (or what amounts to the same thing, profits per worker) are maximized if the competitive firm chooses the output at which marginal revenue-per-worker equals marginal cost per worker."

Through comparative statics Ward then reaches two theorems in this one output – one variable input model. (For a mathematical and graphical reproduction, see Appendix). The first theorem is that *"[a] change in the fixed costs of the competitive Illyrian firm leads to a change in output in the same direction."* The second theorem is that *"[a] change in price to the competitive Illyrian firm leads to a change in output in the opposite direction*." The latter theorem is the often-criticized negatively sloped supply curve. This contraction in employment has a lower limit where average and marginal products are equal.

Dow (2003:143-147) has made an easy representation of the Illyrian firm, which I show here to provide a model that is more similar to the membership market model presented in the next section. The starting point for this discussion is Figure 2, where the labor's marginal and average product as a function of labor input for a competitive firm.

Figure 2, Source: Dow (2003:145)



The only input in this firm is labor and there are no fixed costs. L is the number of workers, the firm's output is Q, w is the wage and p is the price. Average product at input L is AP(L) = Q(L)/L. The marginal product is defined by MP(L) = ΔQ/ΔL. The Illyrian firm maximizes the average income per worker and they choose employment level accordingly. In Figure 2 this employment level is L0, with income per worker at y0 = p·AP(L0). Dow assumes this wage exceeds the wage w that the workers can get in the external labor market, i.e. in the capitalist firms. If y0 < w the workers would leave the LMF and find a job in a competing capitalist firm. As Dow notes, the assumption that y0 > w implies that profit is positive. This is because y = p·AP(L) = pQ/L > w implies PQ – wL > 0. Remember that labor cost is the only cost in this model. From standard economic analysis we know that a profit-maximizing firm would operate at the input level where p·MP(L*) = w. This level is also depicted in Figure 2.

Dow now turns to the obvious question here: How would the workers in this economy adjust to this environment? The Illyrian firm will by mathematical necessity adjust to the point where the marginal and average product curves of labor intersect. We see that this means that the marginal product of labor at L0 exceeds the outside wage w. The workers in the capitalist firms would receive a higher wage by working for the LMF, and would therefore be willing to pay an entrance fee to start working for the LMF. This fee would be somewhere between p·MP(L0) and w, exemplified by Dow to w1. For the outside worker this is a better arrangement. For the existing members it is also better since they now only have to pay w1 to the newcomer, while the value of the output produced by the new member is p·MP(L0). The surplus for the existing members would be p·MP(L0) – w1, which can be divided amongst them. The only way to avoid this behavior is by explicitly prohibiting them. If this is not done, then the solution at (L0, y0) cannot be an equilibrium and there is no reason to believe that LMFs maximize the workers average income (Dow, 2003:146).