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Employment and Productivity of Producer Cooperatives

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INTRODUCTION

Two of the most serious problems faced by developing countries as well as by advanced industrial societies such as the United States are the high levels of unemployment and the low levels of productivity or slow productivity growth. The purpose of this chapter is to explore some of the evidence on the potential of producer cooperatives to remedy these problems. While specific findings on each of these issues are important, it is even more valuable to understand how cooperatives behave in such a way as to increase employment and productivity. The first part of this chapter focuses on the comparative employment and productivity record of the largest movement of industrial producer cooperatives in the world, the Mondragon cooperatives in northern Spain.[1] The experiences of these cooperatives provide substantial data along with instructive insights for the United States as well as for other nations. The remainder of this chapter attempts to explain the superior employment and productivity performance of these Spanish cooperatives by studying the intrinsic behavior of cooperatives vis-à-vis capitalist firms. These observations will be based not only on the Mondragon cooperatives but also on data available for cooperatives in the United States as well as in other industrialized countries.

The largest producer cooperative movement in the world is situated around the town of Mondragon in the Basque region of northern Spain (Campbell et al. 1977; Gutierrez-Johnson and Whyte 1977; Oakeshott

1978:chap. 10; Thomas and Logan 1982). The Mondragon cooperatives are remarkable for their size, their diversity, the complexity of their product mix, their rapid growth rate, their ability to generate capital and to obtain the technical skills for production and expansion, their success in penetrating both national and international markets, and their establishment of democracy and equality in the workplace.

The Mondragon cooperatives were started in 1956 with a single cooperative firm, expanding by 1981 to some ninety-one industrial firms and four agricultural enterprises. All of these cooperatives operate under the aegis of the same social statutes and share in common a system of social security, clinics, a major financial institution, a research and development center, and a renowned technical school. From about 400 employee-members in 1960, the membership expanded to approximately 8,600 members in 1970. By the end of 1981, nearly 19,000 members were employed in cooperative firms around Mondragon, producing products such as iron and steel, machine tools, winches, lathes, industrial refrigerators, household appliances, and electronic components. The sale of these products amounted to about one billion dollars in 1981, with exports totaling around $200 million.[2] One of these cooperative firms, Fagor, is the largest manufacturer of refrigerators in Spain, while another competes successfully in the world semiconductor market. Cooperative construction firms from Mondragon have been contracted to erect entire factories, production ready, in such countries as Libya, Russia, and Mexico.

To provide sources of financial capital and technical advice, the movement created a banking system which had grown to seventy-six branches by 1977 as well as a research and development center to establish new products and production techniques. The cooperative bank also developed an entrepreneurial division to assist member firms in all aspects of their operations, while service cooperatives were created to provide managerial assistance to a few of the largest of the firms. By 1981, the bank had about three-quarters of a billion dollars in assets and some 271,000 depositors.

A majority of the labor force is trained in Mondragon at the Polytechnical School which is renowned throughout Spain and much of Europe for its exceptional training programs. Students take technical courses to obtain official certification for their careers while at the same time working in cooperative firms within the region. The school, bank, and research and development center are themselves run cooperatively under the same social statutes as the other cooperatives. For instance, each worker must invest to become a member. The value of the investment, however, depends upon the success of the particular cooperative. Loans are also available to prospective members. And all members belong to a general assembly which is responsible for the

ultimate control of the cooperatives. The assembly elects the leadership who in turn appoint the management of each cooperative. In addition, there is a social council to represent the interests of the shop floor level on such matters as health, safety, working conditions, payment schemes, and so on.

Every member is assigned a place, or *puesto,* with a value of one to three which depends on the responsibility of and training required for the job. The index determines the level of the job as well as the relative share for each member of any surplus that is distributed. This means that the pay range is about three to one, so that the top executive receives no more than three times the pay of the employee with the lowest training and responsibility.

Income is received in two forms: earnings for labor and the return on each member's capital investment. In addition to their initial investment in the firm, internal capital accounts are accumulated for each member based upon the annual share of the surplus credited to him or her. A rate of interest of 6 percent per year plus the annual rate of inflation on the price level is provided on the capital investment. The investment, however, must be retained with the cooperative until the member leaves, which thus insures the accumulation of capital for sustaining and expanding the movement. For cooperative members at the lower rungs of the occupational ladder, the labor portion of their income tends to be considerably higher than for capitalist workers. Wages, however, are about the same in the middle range, but considerably lower at the upper end of the ladder. Although high-level executives receive less pay than they would in capitalist firms, they do receive large, "psychic" benefits from their solidarity with a dynamic and democratic movement.

COMPARATIVE ASPECTS OF CAPITAL INVESTMENT, EMPLOYMENT, AND PRODUCTIVITY

A comparative analysis of the capital investment, employment, and productivity of the Mondragon cooperatives is instructive. One of the problems in making an analysis such as this is that it is necessary to have an appropriate group of conventional capitalist firms to use as a comparative base. The Mondragon firms tend to be found in the most capital-intensive sectors of manufacturing, such as iron and steel production, consumer durables, refrigeration equipment, capital goods, and so on. While there are no data on specific capitalist firms in these industries, there are aggregate data for the 500 largest Spanish industrial firms as well as statistics for the rest of Spanish industry. Indeed, an examination of the industrial composition of the 500 largest Spanish firms suggests reasonable comparability with that of the Basque co-

TABLE 2.1

COMPARISON OF CAPITAL, LABOR, AND VALUE-ADDED FOR 500 LARGEST CAPITALIST FIRMS, REST OF CAPITALIST INDUSTRY AND THE MONDRAGON COOPERATIVES, 1972

	500 largest capitalist firms	Rest of capitalist industry	Mondragon cooperatives
Employment	936,500	4,711,000	10,310
Fixed capital*	1,425,000	1,350,000	3,942
Value-added*	381,700	987,000	3,481
Capital per worker	1,520,000	282,000	382,000
Value-added/ fixed capital	.27	.73	.88
Value-added per worker	408,000	207,000	338,000

SOURCE: Caja Laboral Popular, *Analisis de Productividad: Indices Generales* (Mondragon, Spain, 1973), p. 16.

*Millions of pesetas

operatives. If anything, the top 500 capitalist companies show less concentration in heavy manufacturing activities than do the cooperatives.

Table 2.1 provides a summary for 1972 of comparisons of capital, labor, and value-added for the 500 largest capitalist firms, the rest of capitalist industry, and the Mondragon cooperatives. These data are derived from an intensive study of productivity carried out by the Caja Laboral Popular, which is the institution that provides the cooperatives with financial analysis as well as other services. Although the cooperatives had only about 10,000 members in 1972, today they have almost twice as many members. Nonetheless, employment in 1972 for the top 500 capitalist firms and the rest of capitalist industry was substantially greater. Accordingly, the estimates of fixed capital and value-added will also reflect these substantial differences in size. The principal foci of comparison include the amount of capital per worker, the ratio of value-added to fixed capital, and the value-added per employee.

The amount of capital per worker provides a measure of the capital investment required to create each job for each of the categories. Based upon these figures, it appears that the 500 largest Spanish firms utilize about four times as much capital for each job created as do the Mondragon cooperatives. The rest of capitalist industry is even less capital-intensive than the cooperative firms, but it should be noted that this residual category is composed of small capitalist firms that are not producing the heavy industrial products of the 500 largest firms

or the Mondragon cooperatives. Obviously, if the differences in amounts of capital per worker derive primarily from differences in the organizational forms taken by the two types of firms being compared—as I argue—then the cooperative approach can have very substantial employment benefits relative to corporate capitalist structure. This possibility is especially important for societies with severe capital shortages and labor surpluses.

The ratio of capital to labor, however, is only a measure of the relative intensiveness of factors of production, and not an indicator of productivity. The efficiency with which capital is being used in production is reflected by the amount of value-added relative to the amount of fixed capital. According to this measure, the cooperatives showed more than three times as large a contribution to value-added per unit of capital than the 500 largest capitalist firms. It is known also, however, that much of the higher product per unit of capital is attributable to the larger labor inputs of the cooperative firms. As a consequence, it is important to evaluate the value-added per worker.

As table 2.1 indicates, in 1972 the 500 largest firms had value-added per worker of about 408,000 pesetas. In comparison, the cooperatives produced about 338,000 pesetas in value-added per worker, while the rest of capitalist industry showed a value-added per worker of about 207,000 pesetas. Thus, as one might expect, the greater capital-intensiveness of the top 500 capitalist firms created greater labor productivity than for either of the other groups of firms. However, once the relative disparities in capital per worker and in value-added per worker are taken into account, rather strong evidence emerges that the cooperative firms have a much higher total factor productivity. Although the top 500 capitalist firms show a capital investment per worker 300 percent greater than that of the cooperatives, the value-added per worker for the 500 largest firms is only about 20 percent greater. This is rather impressive evidence that under a producer cooperative form of organization and worker ownership, basic industrial goods can be produced with considerably greater labor intensiveness while at the same time showing greater total factor productivity than under a capitalist ownership and a corporate form of organization, which the largest of the top 500 firms have.

In summary, the producer cooperatives of Mondragon seem to have a large number of desirable characteristics that would benefit societies with a surplus of labor, a shortage of capital, and low productivity. Cooperatives promise to increase employment substantially by reducing the amount of capital investment required to create each job. Any strategy that will reduce the capital required for the creation of each job to the approximate level suggested by the data gathered from the Mondragon experience, can have a profound impact on economic development where capital is scarce. Obviously, the consequences of

improving total factor productivity also seem to be substantial. Furthermore, the cooperative process creates democratic forms of capital ownership as well as a work organization that contributes to the fuller participation of workers in their own enterprise and thus their working lives.

EMPLOYMENT AND PRODUCER COOPERATIVES

In his important book on *Employment, Technology, and Development,* Amartya Sen states:

> The economic decision processes that determine the technology and the level of employment in a given economy depend on the pattern of ownership of the means of production and relations between the different economic classes. (Sen 1975:60)

In terms of employment, I suggest that the organizational behavior of producer cooperatives tends to create more jobs per unit of output and to require less capital for the creation of each job than do the underlying dynamics of capitalist firms. I have already reviewed the rather dramatic evidence of this phenomenon accomplished by the Mondragon cooperatives. In this section, I will propose possible explanations for their achievements in order to provide a framework for further explorations and future research.

On the basis of reviewing the literature and the field studies on several producer cooperatives, including the data gathered from Mondragon, I believe there are three reasons why producer cooperatives have a much greater employment potential than do capitalist firms.[3] I will present each of my reasons in the form of a proposition. No attempt will be made to prove them other than to state the proposition and then to analyze it. As a consequence, my presentation is designed to be provocative while at the same time arguing for further consideration of producer cooperatives.

My first proposition is that, given similar products and levels of output, producer cooperatives will behave in such a way that they will create greater employment and require less capital investment than will capitalist firms. The basis for this claim is contained in three additional propositions relating to the behavior of producer cooperatives: (1) Producer cooperatives in capitalist societies will tend to maximize employment, subject to some boundary level on economic returns. (2) Producer cooperatives will experience relatively higher productivity for the labor input vis-à-vis capital when compared with factor productivities in capitalist firms. And (3) expected values of costs and productivities of labor are subject to less variability or risk for producer cooperatives than for capitalist firms.

MAXIMIZATION OF EMPLOYMENT

This proposition asserts that the objective function of the producer cooperative is to maximize employment, and perhaps employment stability, subject to a boundary constraint on the long-run economic returns. Obviously, there is also a decision that must be made between current returns to labor and capital accumulation, but this particular matter can be treated separately. From the literature that has been explored, the basis for this proposition is that in capitalist societies producer cooperatives seem to have a far greater preoccupation with employment than with the economic returns to their members. In fact, the most successful firms, such as the plywood cooperatives in the United States and the Mondragon cooperatives in Spain, were initiated, in large measure, to provide employment security or to expand the employment base for the local population.[4] In both cases, provisions have been made to reduce the returns to members during recessionary periods, rather than to reduce the membership. In Mondragon, the statutes for the cooperative firms require that job creation be a primary objective, known as the open door policy (Thomas and Logan 1982:43–49).

To a large degree, these efforts toward employment maximization seem to be based on principles of group solidarity, irrespective of whether the solidarity is based upon ideological principles, cultural perspectives, regional values, or just the common experiences of workers having purchased a firm from their previous employer. Under such conditions, the workers seem much more willing to tolerate low economic returns and to permit the economic returns to vary rather than to reduce employment levels.

Most of the theory deduced from self-managed firms argues that such entities tend to maximize the surplus per member or the profit rate on capital rather than to increase employment.[5] However, this theory does not derive from producer cooperatives in capitalist and labor surplus economies, but from self-managed and collective firms in socialist economies, where employment and other social welfare needs are more fully provided by the state. Thus, it is understandable that in capitalist and labor surplus economies, employment is a far more important criterion, for unemployed workers do not have many alternatives in this type of society and have few or no state-provided services. In socialist economies, however, employment and state-provided health, housing, and other services can be largely assumed, so that members of self-managed firms may be concerned primarily with maximizing the economic returns for themselves. In this type of society, the goal to increase employment will come only when self-managed firms see employment expansion as consistent with higher economic returns per member, as, for example, in the case of a firm

experiencing increasing returns to scale. Thus, it is important to recognize that there are crucial differences between self-managed and collective enterprises in socialist societies and producer cooperatives in capitalist societies. Obviously, the latter environment will tend to be far more attentive to employment objectives.

HIGHER LABOR PRODUCTIVITY

This proposition argues that the comparatively higher productivity of labor vis-à-vis capital, of cooperatives versus capitalist firms, will lead the cooperatives to hire relatively more labor and to acquire less capital. As I will argue, there is a strong basis for believing that producer cooperatives can have higher total factor productivity than their capitalist counterparts. However, the real effect on employment will be determined primarily by the relative productivities of the factors of production. Thus, given a relatively higher labor productivity, more labor will be hired per unit of capital. The actual mechanisms for understanding this higher labor productivity will be suggested in the next section of this chapter.

GREATER STABILITY IN COSTS AND PRODUCTIVITY OF LABOR

This proposition asserts that, given similar outputs and scale, producer cooperatives will hire relatively more labor than capitalist firms because of the greater stability of labor productivity and costs under the cooperative form of enterprise. The assumption is made in determining factor proportions that more than the expected values of the costs and productivities of the factors of production will be considered. The stability of the expected values also must be taken into account. Furthermore, it is assumed that firms tend to avoid risk. My claim is that producer cooperatives face more predictable cost and productivity consequences for utilizing labor than do capitalist firms, while the risks with regard to capital are largely comparable, since capital carries a rather predictable cost and productivity for both capitalist and cooperative enterprise.

To understand why the risks differ between these two types of firms, one need only examine the status of labor in each organization. Producer cooperatives are governed by workers and their representatives, and all their policies must be rationalized in terms of the interests of the worker-members. In contrast, capitalist firms are organized to promote the interests and profitability of capital and its accumulation. Since members of producer cooperatives receive wages as well as any surplus that is generated, they have strong incentives to avoid disrupting production and adversely affecting costs. Indeed, since the workers can set the wage structure for any planning period, they can

even reduce wages to meet instabilities created by the market or other external forces. Thus, producer cooperatives are unlikely to face a risk with respect to worker challenges that might result in disruptions, productivity lapses, and wage demands that would affect the cost of labor.

In contrast, capitalist firms must hire workers under wage contracts. This arrangement gives employees few positive incentives to maintain high levels of productivity. If the workers are able to organize effectively, they can confront capital with costly disruptions of production, reduced labor discipline, and higher costs of production. Even in the absence of trade unions, there is always the threat of clandestine challenges to production, such as sabotage. Thus, a capitalist firm takes the risk that the expected value of labor productivity and its costs may be subject to high variability. Furthermore, the factors affecting this phenomenon may depend upon macropolitical and social events beyond the control of the firm. In contrast, the producer cooperative is able to avoid these risks and can depend upon reasonably predictable productivity and cost relations for both labor and capital. Thus, given the aversion to risk by the capitalist firm along with the higher risk associated with the labor input, one would conclude that, even when both firms face similar anticipated costs and factor productivities for the two inputs, capitalist firms will hire less labor than will producer cooperatives.

PRODUCTIVITY AND PRODUCER COOPERATIVES

In addition to the claim that producer cooperatives will tend to utilize less capital and will create greater employment than capitalist firms, producer cooperatives also have the potential for greater productivity. More specifically, for any particular level and combination of factor utilization, they will show higher total factor productivity and a higher marginal productivity of labor vis-à-vis capital than do capitalist firms. The data for the Mondragon cooperatives provide rather impressive support for this contention. In this section, I will suggest the basis for and the sources of these productivity differences. The emphasis of my presentation will be on the differences in organizational incentives present in worker cooperatives versus capitalist firms employing wage labor and their consequences with respect to productivity.

INDIVIDUAL AND COLLECTIVE INCENTIVES

Producer cooperatives have two major characteristics that differentiate them from capitalist firms. And these divergences create differences between the two types of firms in the incentives to contribute to the

productive effort as well as in the organization of the productive effort. First, cooperatives are owned by their workers. Thus, it is the workers who will share in the success of the cooperative or who will bear the consequences of its failure. Second, since a cooperative is managed according to democratic principles, the production can be organized to maximize the interests of the workers. In contrast, capitalist firms are owned primarily by outside investors. Workers are paid market wages for their labor time, and profits are allocated to the capitalist owners. Furthermore, the organization of work is determined by managers who maximize their own incomes and status by serving the interests of capital and their managerial control of the work process, rather than by representing the concerns of the workers (P. Walker 1979).

These differences lead to rather different individual and collective incentives for workers in the two types of firms as well as to differing abilities of workers to organize production to maximize their own interests. More specifically, there is a greater incentive for cooperative members to be productive because of the rather direct connection between the success of the cooperative and their own personal gain. Like capitalist firms, cooperatives provide rewards for members according to differences in training, skills, and responsibilities, but the distribution of these rewards tends to be far more egalitarian in the cooperatives.[6]

In addition, there are two major influences that tend to reinforce work effort and productivity in a cooperative. First, if a cooperative does well, all of the workers will be better off. Second, the workers tend to reinforce the productivity and work effort of their members through collegial support and peer pressure. Since the work process is determined democratically, all workers participate to some extent in governing the firm. Further, every worker knows that if difficulties arise in his part of the productive process he will be helped by his fellow workers. There is strong social reinforcement and camaraderie for working together and making a contribution, and likewise there are powerful forms of social sanctioning and disapproval for members who are not putting out a maximum effort.

Although capitalist firms may set out pay structures and procedures for promotion that will reward individual productivity, the system must be administered by procedures and persons external to the work process rather than functioning as an integral part of that process, as happens in cooperative firms. Furthermore, the informational and administrative requirements for identifying and rewarding individual differences in productivity would create unduly high informational and transactional costs for a capitalist firm.[7] Thus, for a capitalist firm the procedures for establishing pay and status differences must be only

approximate with respect to productivity differences, and will usually correspond to the nature of the worker's category and experience rather than to direct measures of productivity. Accordingly, for capitalist workers the ties between the incentive structures and productivity tend to be much less direct and more approximate than the rather direct and more accurate connections for cooperative workers.

Moreover, the social reinforcement from worker peers that is integral to a collective organization is antithetical to a capitalist organization, where workers are placed in direct competition with one another for employment, promotions, and pay. In capitalist firms a majority of the work is divided into relatively minute tasks so that the failure of one worker to perform properly is not seen as affecting the pay and status of other workers. In fact, in a world where workers are expected to compete with one another for promotion and employment security, the attempt by one worker to outperform his fellow workers is seen by his colleagues as a threat.[8]

The result is that at both the personal and the collective level, there tend to be greater incentives to be productive in cooperatives than in capitalist firms. The fact is that in a democratic organization these incentives can also influence the shape of the work process itself, which in turn will also have an effect on productivity. Thus, I will identify and conjecture on the sources of individual and organizational behavior that tend to be associated with higher productivity in cooperatives.[9]

PERSONAL BEHAVIOR

Because of the personal and collective incentives in cooperatives for reinforcing productive work, members show lower absenteeism rates, a greater work effort, greater work flexibility, and better maintenance of the plant and equipment than do workers in capitalist organizations. In Mondragon, for example, absentee rates were about half those at comparable capitalist firms in the same region (Thomas and Logan 1982:49–52). In part, the lower absenteeism rates derive from greater loyalty to their work organizations and colleagues and also from the social sanctions of peers against excessive absenteeism. Furthermore, because the work is likely to be more self-actualizing and participative, workers develop a positive desire to engage in the work process. Finally, in cooperatives the fruits of low absentee rates go directly to the workers themselves in the form of larger benefits.

Worker turnover also tends to be lower in cooperatives than in capitalist firms. For example, in 1974, the annual rate of worker turnover in the Mondragon cooperatives was only 2 percent, while in the capitalist manufacturing enterprises in the surrounding provinces it

reached about 14 percent.[10] Worker turnover is costly because it entails additional hiring costs, record keeping, and training, and often there are bottlenecks in production because of the lag in time between workers leaving and new ones being hired. Cooperative workers are also less likely to leave for a number of other reasons, including the following: greater employment security, the incentive of payoffs in the future for their present work effort, the collegiality of the work community, a greater involvement in the work process, and the relative nonliquidity of ownership shares, since they can be sold only to new members and not to the general public.

A greater individual work effort is achieved in cooperatives as a result of the reinforcing work environment as well as the expectations of an economic surplus. In a like manner, cooperative workers are motivated to be more flexible and to learn several jobs, so that they will be able to assist other workers at points of bottleneck in the production. There are also incentives to adapt to periods of high work demand as well as periods of slack. Finally, workers in cooperatives have a great incentive to take care of the machinery and the other capital with which they work and thus to reduce breakdowns and increase the productive life of the capital. By contrast, in capitalist firms there is often a disdain for the condition of the equipment and even an incentive to permit it to malfunction and break down to provide temporary respite from the work process.

ORGANIZATIONAL BEHAVIOR

Not only is individual behavior of workers in cooperatives more productive, but the overall organization of production is also able to build upon these cooperative advantages in several ways. For example, the fact that workers have incentives to produce a good product and to be highly productive means that cooperative firms need relatively few supervisors and quality control inspectors.[11] Quality control and a disciplined work effort are internalized into the behavior of workers rather than enforced by external procedures. Thus, the cooperative is able to save the cost of a large cadre of unproductive middle managers which are an integral part of capitalist production where worker discipline and product quality must be ensured by external supervision.

There are also potential cost savings at the lower end of the occupational spectrum, because cooperatives have few, if any, unskilled workers. Given the relatively equal pay scales in cooperatives, unskilled workers will be placed into training programs to obtain skills. Also, to eliminate the need for unskilled workers, cooperative members tend to clean up after themselves rather than relegating these tasks to another class of worker. As I mentioned before, this policy is

reinforced by the fact that cooperative members have a large stake in maintaining the condition of their own plant and equipment.

Cooperatives are also able to rotate work roles among members and to train workers for a variety of jobs. As a consequence, this flexibility, vis-à-vis the performing of a routine and repetitive task, enhances the attachment and interest of workers in both the work process and the organization. Likewise, since workers have the opportunity for continuous skill development, members are prepared to perform various different tasks, which reduces the problem brought about by the absenteeism of any particular worker. Furthermore, this flexibility also improves a worker's ability to function with his colleagues, which in turn increases the sense of community among the workers by uniting them in a common set of endeavors rather than separating them into individual task categories, as do the capitalist firms. The arrangement found in cooperatives also eliminates bottlenecks in production because workers are able to shift tasks to assist where help is needed.

In cooperatives, training is also provided more efficiently than in capitalist firms, where competition for status means that workers have disincentives to assist fellow workers in learning new skills. In cooperatives, the need for a reinforcing work community and a flexible work force to maximize productivity means that fellow workers have incentives to assist one another in acquiring new skills. It is also important to point out that in a cooperative training effort, it is the skills and intelligence of those persons who have the most knowledge that will tend to be diffused to the group.[12] The reason for this is that there are group incentives for those who are best equipped to share their knowledge with other members of the group. These incentives are absent in a capitalist firm where a worker's competitive advantage is enhanced by keeping his insights to himself.

In summary, there exist both personal and collective incentives in cooperatives that are likely to lead to higher productivity. The specific consequences of these incentives are that the workers in cooperatives will tend to work harder and in a more flexible manner than those in capitalist firms; they will have a lower turnover rate and absenteeism; and they will take better care of the plant and equipment. In addition, producer cooperatives function with relatively few unskilled workers and middle managers, experience fewer bottlenecks in production, and have more efficient training programs than do capitalist firms.

SUMMARY

This chapter began with the overall contention that producer cooperatives have a greater employment and productivity potential than do comparable capitalist firms. Corroborating data were presented for the largest movement of industrial producer cooperatives in the world,

and an attempt was made to establish the behavioral aspects of producer cooperatives that seem to explain these findings. However, an important final issue is to ask whether findings on the Mondragon cooperatives can be generalized to a society such as the United States.

It is important to reflect on the representativeness of the Mondragon cooperatives as examples of the potential of cooperatives for generating employment and increasing productivity. These cooperatives are exceptional not only in their size and in their variety of high technology products but also in their success. To a very large extent they have been able to resolve the tension between their needs for internal democracy and equity and the demands of the marketplace and the external environment. Clearly, a substantial reason for this success is the ability of the Mondragon group to develop a set of supportive institutions such as the bank, the research and development center, the technical assistance services, and the schools, which provide a basic support system for their survival and expansion.

Yet, as many of the essays in this book emphasize, few cooperatives have been as successful as those of Mondragon in meeting their needs for survival and expansion. It is reasonable that a major factor for their greater success is the common culture and ethnic solidarity created by their Basque origins and affiliations. The Basques have always been a relatively cooperative culture which historically resisted the formation of a wage labor proletariat. Their landholdings were very equitably distributed among families, particularly in contrast to the hacienda mode of agricultural production in the south of Spain. Moreover, cooperative practices among local families in the various phases of farming has had a long tradition. For these reasons, it may be that the Basques had less difficulty in initiating and implementing cooperative industry than groups with a more individualistic tradition.

However, there are two reasons why the observations and lessons from Mondragon have wider application. First, studies of cooperative work organizations in the United States and in other countries have shown structural and behavioral features similar to those of Mondragon, as was suggested throughout. Second, much of the success of the Mondragon firms seems to be directly tied to the unique institutions that they have created to support their movement. The bank, the research and development center, the technical assistance services, and the schools are uniquely suited to serving the cooperatives, and it is their creative interplay and integration that seems to explain the remarkable success of the movement. Thus, to the degree that these types of institutions can be transplanted elsewhere, one would expect that much of the success of the Mondragon cooperatives could also be replicated. For these reasons the Mondragon experience would seem to have important consequences for raising employment and productivity in the United States.

NOTES

1. Most of the data are drawn from the Mondragon cooperatives. The author conducted interviews and observations in Mondragon in the spring of 1975. Since that time, he has maintained continuous contact through correspondence and reports as well as through the fieldwork of his graduate students who have gone to Mondragon (e.g., Ornelas 1980). Especially important are the annual *Memoria* of the Caja Laboral Popular. In addition, data are drawn from a visit in 1975 to the Meriden Triumph Motorcycle Cooperative and a subsequent analysis (Carnoy and Levin 1976*b*), and from extensive fieldwork during the summer of 1978 at a major cooperative in the San Francisco Bay Area. Other sources that are heavily used include the information (Jackall and Crain, chap. 5, this volume) derived from the survey of cooperatives by the Center for Economic Studies as well as the studies of Edward Greenberg (chap. 8) for the Northwest plywood cooperatives. In addition, this essay draws heavily on the burgeoning literature on Mondragon and the plywood cooperatives.

2. The dollar figures are based upon the exchange rate at that time.

3. J. Vanek and J. Espinosa (1972) have argued persuasively that labor-managed firms will undertake activities that would not be undertaken by capitalist firms, which are motivated only by very high profit rates. While this point has important consequences for employment generation, I will not address it here.

4. See, for example, Berman 1967, Bernstein 1976*b*, Bellas 1972, and Greenberg, this volume, chap. 8, on the plywood cooperatives. Also see Carnoy and Levin 1976*b* for an example of a British cooperative that was inititated to save jobs.

5. For example, see Vanek 1970, 1977*c*, Dreze 1976, and the surveys by A. Steinherr (1978*a*, 1978*b*). A number of authors recognize that membership solidarity may inhibit reduction in the size of a labor-managed firm, even when such reduction would increase the dividends per member. For example, see Bonin 1981 and Meade 1972.

6. A. Steinherr (1978*b*) discusses the principles of worker remuneration in the labor-managed firm. This relatively high level of wage equality is reflected in virtually all cooperatives. As noted, the maximum differential in returns to labor for the Mondragon cooperatives is 3 to 1. The Meriden Triumph Motorcycle Cooperative was formed on the basis of equal returns (Carnoy and Levin 1976*b*). For a detailed analysis of pay schemes for a range of cooperatives, see Oakeshott 1978.

7. This view is rather widely accepted in modern labor economics. Recent contributions address how information for a group of workers might be used to make hiring and wage decisions on the basis of market signals. Presumably, such information can be used to establish expected values and probability distributions of productivity for groups of workers, which can be used to inform hiring and wage policies. See Spence 1973 and Hirschleifer and Riley 1979. Indeed, informational and transactional costs are used to justify the modern, hierarchical corporate entity as an efficient approach to production. See Alchian and Demsetz 1972, Stiglitz 1975, Williamson 1975, and the critical discussion by M. Reich and J. Devine (1981).

8. In contrast to the neoclassical position on this subject, it can be argued that the problem of shirking is an intrinsic challenge of the capitalist firm, whereas the cooperative firm has intrinsic incentives and social mechanisms to promote the productive effort of all of its workers. Compare this perspective with the view presented by Stiglitz (1975) which argues that hierarchy and coercion increase the productivity of the firm and the earnings of workers, and thus are in the interests of the workers. Also see the extensive discussion by M. Reich and J. Devine (1981).

9. The following generalizations are derived in large measure from field studies of cooperatives carried out over a seven-year period by the Center for Economic Studies, Palo Alto, California. The earlier project on "The Educational Requirements for Industrial Democracy" was supported by the National Institute of Education from 1973–1977. The later project on "An Economic Analysis of Producer Cooperatives with Respect to Job Creation, Productivity, and Worker Satisfaction" was funded by the National Institute of Mental Health from 1977 to 1980. The earlier work was summarized by Levin (1980), and several of the later studies are reported in this book. The purpose of the following analysis is not to prove as much as to develop an explanatory structure for further inquiry on the comparative differences in productive behavior and their consequences for producer cooperatives. For some evidence that relates the degree of worker participation to productivity in self-managed firms, see Jones and Svejnar 1982, Espinosa and Zimbalist 1978, Cable and Fitzroy 1980, and Jones and Backus 1977.

Employee ownership without democratic management and participation, may not produce changes in absenteeism as reflected in the provocative study by T. Hammer, J. Landau, and R. Stern (1981).

10. Based on internal analysis by the Caja Laboral Popular, provided to the author on his visit in May 1975.

11. This difference is very noticeable in Mondragon, and it was one of the major changes initiated by the Meriden Triumph Motorcycle Cooperative in shifting away from capitalist production, as reported by Carnoy and Levin (1976*b*). E. Greenberg (chap. 8), also found that while cooperative plywood firms used only one or two supervisors per shift, the comparable capitalist firms used six or seven. A mill that had recently been converted from cooperative to capitalist ownership quadrupled the number of line supervisors and foremen.

12. Educational experiments have confirmed this result. See Slavin and Tanner 1979.