

WHY HAS THE LABOR-MANAGED FIRM FAILED

Svetozar Pejovich

Introduction

The end of the totalitarian socialist rule has created an institutional vacuum in Eastern Europe and the former Soviet Union. The transition process we are witnessing in that region is, in effect, the search for a new set of institutions.¹ We still do not know as much about the process of institutional change itself, about who should change the rules and under what circumstances the rules ought to be changed.² The transition process in Eastern Europe is, therefore, a gift from heaven for social engineers. And they have responded to this gift by flooding the intellectual and political markets with models, ideas, and proposals for the development of new institutional arrangements in the region.

Industrial democracy is an umbrella for all the different forms of labor participation in the management of business firms. A striking feature of industrial democracy is that it has failed to emerge spontaneously. It has also failed to perform successfully whenever and wherever imposed by fiat. Codetermination in Germany, the labor-managed economy in former Yugoslavia, and various labor participatory schemes in some West European and South American countries are good examples.

Cato Journal, Vol. 12, No. 2 (Fall 1992). Copyright © Cato Institute. All rights reserved.

The author is Professor of Economics at Texas A & M University. He wishes to thank Louis De Alessi, Enrico Colombatto, Joze Mencinger, John H. Moore, and Jim Dorn for their helpful comments. He also wishes to thank the Earhart Foundation and the Lynde and Harry Bradley Foundation for supporting his research on the economics of property rights in Eastern Europe.

¹Institutions are usually defined as the legal, regulatory, and custom-made arrangements for repeated human interactions—that is, institutions are the rules of the game whose major function is the predictability of behavior.

²Douglass North and members of the Public Choice School have contributed most to our understanding of the process of institutional change.

It would be, however, a mistake to underestimate the survival power of the concept of industrial democracy. Labor participation in the management of business enterprises offers too many opportunities for social engineering and satisfies too many ideological preferences to be discarded on account of its poor real world performance. This is especially true in Eastern Europe and the former Soviet Union where the end of the communist rule could not and indeed did not put an end to all the communist institutions and legacies. Thus, the search for new rules of the game in that region provides the supporters of industrial democracy with an opportunity to be heard (Vanek 1990). And their chances to be heard are likely to grow as free-market policies fail to produce quick returns.

This paper concentrates on a specific type of industrial democracy: *the labor-managed firm*. The support for the labor-managed firm comes from several sources: (1) the old communitarian tradition in most East European countries; (2) the collectivist mode of thinking in that region—a legacy of the communist rule; (3) labor leaders and social democrats in Western Europe; and (4) a handful of academic supporters in the West, such as Jacques Dreze, Henryk Flakierski, James Meade, Jan Svejnar, and Jaroslav Vanek. Also, some current proposals for privatizing state firms in Russia, Serbia, Slovenia, and Poland contain strong elements of labor-participation in management.

In a free society people get what they want to pay for. And that applies to all the different methods for organizing production. Investors in private-property, free-market economies are free to write any kind of agreement with their contractual partners. Indeed, we observe a large number of different types of business firms in the West. All those firms have emerged voluntarily and survived competition from other types of business organizations.

Dreze (1976), Meade (1974), Prasnikar and Svejnar (1990), and Vanek (1990), among others, have asserted that the labor-managed firm is or could be an efficient method of organizing production. Yet, this type of business organization has failed to appear on a significant scale in free-market, private-property economies. An implication is that the value of labor participation to the employees of business firms is worth less than the costs to their contractual partners of providing it. By failing to specify the property and contracting rights within which the labor-managed firm exists, Vanek and others have ignored the effects of negative incentives and high transaction costs on its ability to survive in competitive markets.

The purpose of this paper is to show how the bundle of property rights in the labor-managed firm creates two behavioral variables

that are *specific* to that bundle of rights (and of no significance in the private-property, free-market economy). Those two variables are the key to explaining the inefficiency of investment decisions by labor-managed firms.

Property Rights and the Labor-Managed Firm

The Yugoslav experience and academic research have shown that, like all other type of business enterprises, labor-managed firms could differ from each other in terms of their internal rules and organizations. However, the bundle of property rights within which any type of organization exists is the key to analyzing how it functions. It is, therefore, necessary to identify the basic bundle of rights which sets the *labor-managed firm* apart from other types of business enterprises. This bundle of property rights is characterized by the following five features:

1. *The employees govern the firm.* The employees are decision-makers in their respective firms. We assume that the firm's decisionmaking structure, chosen by either its employees or the state (on their behalf), takes into account preferences of the median worker.
2. *The employees have claims on the firm's cash flows.* This right says that the employees of the labor-managed firm are responsible for all the financial and legal obligations of the firm as well as the allocation of the firm's residual to any purpose (i.e., the wage fund, investment fund, reserve fund) that is not explicitly forbidden by law.
3. *The employees' rights specified under (1) and (2) are not transferable.* The right of ownership³ in (1) and (2) would, in effect, allow the employees to sell both their right to govern the firm as well as their residual claims on the expected future cash flows of the firm. The labor-managed firm would then turn into a private-ownership firm.
4. *The employees' rights specified under (1) and (2) are contingent on their employment with that firm.* A worker's claim on his share of the residual terminates when he leaves the firm. To extend his non-tradeable claims on the firm's cash flows beyond that time would be costly to implement and monitor. It would also impose a rising burden on the firm's future costs of production. This specific right makes the employees' time horizon (the

³Transferability of assets at mutually agreed prices is a critical component of the right of ownership.

expected length of stay with their firm) a critical variable in the labor-managed firm's choice of investment projects.

According to Eirik Furubotn (1976), the time horizon of the employees of the labor-managed firm is rather short. It is also likely to fall short of the employees expected termination dates. First, an important implication of the rights specified under (2) and (3) above is that the employees cannot diversify their portfolio of non-tradeable claims on the firm's cash flows. Thus, we should expect to observe a conservative bias in the firm's decisions that have future consequences. An important paper on the codetermining firm in Germany (Benelli, Loderer, and Lys 1987) confirms this proposition. Second, hiring younger workers could easily shrink the employees' time horizon. A 45-year-old worker has, in general, a shorter work horizon than a younger man. However, his time horizon with the firm is likely to be longer than that of a younger man who hopes to move up by moving around.

5. *The labor-managed firm has no ownership in its capital assets.* The employees determine the use of capital assets held by their firm; however, they only hold non-tradeable claims on the firm's cash flows while they work for that firm.

Research has shown that the bundle of rights specified under (1) - (5) above creates some negative incentives and positive transaction costs that are responsible for the inefficiency of investment decisions by labor-managed firms (Jensen and Meckling 1979, Milovanovich 1990, Pejovich 1990). To alleviate those effects, some writers have proposed various immunizing stratagems (Flakierski 1989, pp. 67-70) which either ignore transaction costs of making, maintaining and enforcing those changes, or tend to privatize labor-managed firms, or both.

The Labor-Managed Firm and Investment Decisions

The labor-managed firm can acquire capital assets through a state agency, by renting them from others, and by issuing debt claims. Also, the employees can allocate a part of the residual into the firm's investment fund.

Acquiring capital through a state agency has many efficiency implications. It takes an act of faith to assume that the social welfare function exists, that the state knows it, that the state is going to do something about it, and that the state will be willing to relinquish its control over the assets given to enterprises. There is no empirical

evidence to support this type of naive expectations about the behavior of any government (Brunner 1987).

The rental option for acquiring capital assets has two major problems. First, a number of intangible productive assets, such as the firm's investment in the distribution systems, the design of products, and training of the labor force, cannot be rented. Second, the rental of durable productive assets is a costly method of acquiring capital assets.⁴

Given its bundle of property rights, the labor-managed firm's main sources for acquiring capital assets are then the claims of debt-owners, and the personal contributions of the employees. The former are pure financial claims. As for the latter, since the employees have no ownership claims on the firm's capital assets, they cannot have claims on the monies they give to the firm to purchase new assets. The employees only hold non-tradeable claims on the firm's return from those assets, and even that for only as long as they stay with the firm.

External Financing of Investments by the Labor-Managed Firm

The sources of external funds could be state and/or bank loans, sale of bonds, interfirm borrowing, and perhaps some other monies. This paper concentrates on the effects of bank credit on investment decisions by labor-managed firms. Other external sources of funds would be subject to similar incentives.

The employees' benefits from investments financed by bank loans. The employees of the labor-managed firm have non-transferable claims on the stream of annual returns (B) from any specific investment (I) made by their firms. This property right creates incentives for the employees to transfer the firm's cash flows from the future to the present. The employees can run down inventories, fail to replace capital assets, under-invest in the maintenance of capital goods, vote themselves large pension benefits with no funding provisions, grant themselves large severance payments, sell long-term bonds with no sinking-fund provisions, and so on. To alleviate the effects of those incentives, the government has to invest resources in enacting, maintaining, and enforcing a number of constraints on the property and contracting rights of the employees. Examples are

⁴The obvious agency costs of the rental arrangement are those associated with the reduced incentives for the user to maintain the assets properly, to guard it from theft, and the increased incentives to misuse it. ...The magnitude of these costs along with the monitoring and bonding costs that would be incurred in the effort to control them explains why rental or leasing of most durable production goods is not observed. It is simply a more costly contracting arrangement (Jensen and Meckling 1979, p. 480).

the depreciation rules for capital assets, the rules for maintaining and repairing physical assets, the rules for severance payments, and so on. An important consequence of those constraints is that they require a costly bureaucracy that is *specific* to the labor-managed firm.⁵

Two implications of the employees' non-tradeable claims on the firm's cash flows are the following. (1) The employees do not view equivalent-present value projects as being equal—those projects whose returns occur more quickly are preferred to those with even flows, and the latter are preferred to investments whose yields are bunched in later periods. (2) The absence of financial markets means that the rate of interest does not express the present prices of capital goods relative to their current costs of production; it merely measures a cost of investment.

An employee's benefits from any specific investment (I) are limited to the annual returns (B) from that investment over the employee's expected stay with the firm (t).⁶ The time horizon of the median member of the collective or whatever the decisionmaking group happens to be is then a critical factor in choosing investment projects in the labor-managed firm. In comparison, the time horizon of an investor in the private-property, free-market economy is irrelevant because the flow of benefits over the productive life of his assets is available to him in one lump sum.

The employees' costs from investments financed by bank loans. The employees' cost of any specific investment (I) financed by bank credit is the series of payments (C) to the bank over the employee's time horizon (t). Given the rate of interest, the firm's annual payments

⁵That is exactly what happened in Yugoslavia, the only country that has experimented with this system on a large scale and over a period of time long enough to provide us with a strong data base. Prasnikar and Svejnar (1990, p. 5) missed the point when they tried to separate a theoretical construct of the labor-managed firm from the Yugoslav experience: The strong influence of the League of Communists, the Communist-oriented trade unions and the various government authorities suggests that one ought to examine seriously the extent to which the behavior of Yugoslav firms resembles that of a proto-typical socialist enterprise rather than that of a labor-managed firm. The labor-managed firm needs the political monopoly to protect it from competing methods of organizing production, and the economy needs the self-management bureaucracy to protect it from the employees' incentives to eat up their firms.

⁶The employees' benefits could also be expressed in terms of their present values as follows:

$$PV = [B(1+t)^t - 1] / i(1+t)^t$$

where PV is the present value of the flow of returns (B) from a specific investment (I) over the employees' time horizon (t). PV equals the true present value only when (t) is equal to or greater than the expected life of that investment. This paper focuses on annual returns and costs. It is a simpler approach that has no effect on our results.

depend on the length of time over which the loan has to be repaid (n). The length of bank loan is an item in the contract that is negotiated between the borrower and the lender. It is then important to identify the borrower's and the lender's incentives with respect to (n).

Suppose the labor-managed firm secures an investment loan that has to be paid back to the lending bank over a period of time (n). If the time horizon of the firm's employees (t) were equal to or greater than the length of that loan (n), the current group of workers would bear the entire costs of investment (I). However, *if the employees' time horizon fell short of the length of loan, a part of the total cost of investment (I) would be shifted to the next generation of workers in the same firm.*

The employees of the labor-managed firm have then incentives to seek investment loans with as lengthy repayment schedules as the banks are willing to go along with, and to negotiate agreements to pay only interest on investment loans over the current employees' time horizon.

The employees' annual costs of any specific investment (I) financed by bank credit is then

$$C = I \frac{i(1+i)^n}{(1+i)^n - 1}, \quad (1)$$

where (n) is the length of bank loan.

The choice of investment projects by labor-managed firms. The employees' benefits from an investment project are the expected returns (B) over their time horizon. The employees' costs from that same investment are the annual payments to the bank (C) over their time horizon. It follows that the investment decision of the labor-managed firm depends on the relationship between these two flows. To simplify discussion, we assume that both flows are uniform over the employees' time horizon.⁷ Then,

$$B \geq I \frac{i(1+i)^n}{(1+i)^n - 1}. \quad (2)$$

Since the length of loan (n) is determined *contractually* between the lender and borrower of investment funds, it is possible to adjust (n) so that

$$B = I \frac{i(1+i)^{n^*}}{(1+i)^{n^*} - 1}. \quad (3)$$

⁷Uneven flows of (B) and (C) could generate different technical solutions but they would not change the effects of the bundle of property rights in the labor-managed firm on the employees' incentives in choosing investment projects.

The equality (3) shows the *minimum* (n^*) required to make a specific investment project acceptable to the employees of the labor-managed firm. The investment decision of the labor-managed firm then depends on the ability of its manager to negotiate a loan that, at the minimum, has to be repaid over a period of time that makes the flow of returns from an investment equal to its production costs times the flow of income over (n^*) years from \$1 now. *Whatever the rate of interest, the length of bank credit (n) is a significant, perhaps the most significant, variable in the firm's choice of investments.*⁸

In comparison, the decisionmaker's time horizon and the length of bank loan play no role in the choice of investment projects in the private-property, free-market economy.

Changes in the length of bank credit and their implications. Let us now look at the effects of changes in the length of bank loans on the efficiency of investment decisions by self-managed firms.

The employees of a labor-managed firm are looking at an asset that costs \$1,000,000, has a productive life of 15 years, and promises to yield \$118,326 per year over a period of 15 years. At the market rate of interest of 10 percent, the present value of that asset is \$900,000, and the investment is clearly inefficient. However, suppose that the manager of the firm is able to borrow \$1,000,000 from the bank on a 20 year loan at 10 percent. A private-ownership firm would still turn the project down, but the labor-managed firm would not. The employees' annual payments to the bank would be \$117,460 per year, while their annual benefits are \$118,326. As long as the employees' time horizon is 15 years or less, the employees would have \$866 each and every year to divide among themselves. So they would make an inefficient investment. The costs shifted to the next generation of workers (including those current employees whose time horizon exceeds 15 years) would equal annual payments of \$117,460 per year over the last five years of the contract. If the employees' time horizon were, say, 12 years, the costs shifted to the next generation of workers would be \$117,460 per year for the remaining eight years, and so on.

If the length of loan is 19.57 years, the firm's annual payments (C) to the bank would be equal to annual returns (B) from that investment. However, a 20 year loan gives the employees an additional \$866 per year *over their time horizon* with the firm. It means that

⁸Our results are contrary to those Meade (1972), Vanek (1970, 1977), and other advocates of the labor-managed firm who consider the market (clearing) rate of interest to be a critical variable that assures the system of the efficiency of externally financed investments.

TABLE 1
RELATION BETWEEN THE LENGTH OF LOAN AND REWARDS
OFFERED

Length of Loan	Benefits (<i>B</i>)	Costs (<i>C</i>)	Benefits—Costs
19.56 years	\$118,326	\$118,326	\$ 0
20	118,326	117,460	866
21	118,326	115,624	2,702
22	118,326	114,005	4,321
23	118,326	112,572	5,754
24	118,326	111,300	7,026
25	118,326	110,168	8,158

the manager of the firm has incentives to offer some people at the bank an equivalent of up to \$866 per year in cash or specific goods in exchange for a 20 year loan. And he would have incentives to offer even better rewards for longer loans. Table 1 shows how changes in the length of loan increase the amount of money the manager can use to seek a good contract.

Suppose the time horizon of the employees is 10 years, and the firm has three investment projects under consideration. The productive life of each project and their respective annual streams of benefits per \$1 are shown in Table 2, columns (1) and (2). Column (3) shows the minimum length of bank loan (n^*) that makes the flow of annual

TABLE 2
PROPERTY RIGHTS AND THE INVESTMENT DECISION

Life of Asset	Benefits (<i>B</i>)	Minimum Length of Loan(n^*)
10 years	\$.146	12.12 years
15	.118	19.73
20	.106	30.13

benefits equal to the employees' annual costs from those investments. At a 10 percent rate of interest, a private-property firm would clearly turn all three projects down because the present value of each project at the 10 percent rate of interest is 90 cents. However, if the manager of the labor-managed firm were able to negotiate bank loans in excess of (n^*) years the employees would find all three investments acceptable.

Internal Financing of Investment by the Labor-Managed Firm

The employees' non-tradeable claims on the firm's cash flows create two wealth-increasing options for them. The employees can take the firm's residual out as wages and invest in assets they would own. The employees can also leave a part of the residual with the firm for investment in new capital assets in which they would hold non-tradeable claims contingent on employment by the firm.

Property rights differences between those two options have been researched in some detail (Pejovich 1969, Furubotn and Pejovich 1970, Jensen and Meckling 1979). The major results of that research are summarized here in order to complete our discussion on investment decisions of the labor-managed firm.

The employees have the right of ownership in the assets they purchase as individuals. They can trade those assets, give them away, will them to their heirs, or do anything else that is not explicitly forbidden by law. On the other hand, the employees have only non-tradeable claims on the firm's year-to-year cash flows contingent on employment. That is, they have claims on neither the amount of the residual they leave with the firm for purchase of new productive assets nor the year-to-year returns from those assets once they leave the firm.

The employees' cost of any specific investment (I) financed from the firm's residual is the sum total of annuities (y) they could have received over the period (t) by taking the amount equal to (I) out as income and saving their respective shares at (i) rate of interest. The annuity per \$1 is

$$y = \frac{i(1+i)^t}{(1+i)^t - 1} \quad (4)$$

The employee's benefits from the same investment (I) financed from the firm's residual is the flow of returns (B) over their time horizon (t).

For the employees to be indifferent between internally financed investments and their own individual savings, the former must earn the rate of return (r^*) equal to (y) in (4); that is, the required rate of return (r^*) for internally financed investments must be equal to the annuity from one dollar at the rate (i) over the employees' time horizon (t).⁹ The rate of return (r^*) is the rate of interest (i) *adjusted*

⁹The assumption is that the two investment alternatives are alike with respect to risk level and liquidity. It is a simplifying assumption that has no effect on the results of our analysis in the paper.

for the incentives effects of property rights in the labor-managed firm:

$$r^* = \frac{i(1+i)^t}{(1+i)^t - 1} \quad (5)$$

The rates of return that would make the employees indifferent between investments that are internally financed and their own private investments could be easily calculated. At a 10 percent interest rate and time horizons of 1, 5, 10, and 15 years, they are 110 percent, 26 percent, 16 percent, and 13 percent, respectively.¹⁰ Given the firm's schedule of investment opportunities, the difference between the market rate of interest (i) and the required rate of return (r^*) must result in an inefficient level of self-financed investment by labor-managed firms.

Conclusion

This paper describes the prevailing property rights in the labor-managed firm, identifies incentives and transaction costs that are *specific* to that bundle of property rights, and analyzes the effects of those incentives and transaction costs on the employees' investment decisions. Reminding those who advocate labor participation in the management of business firms that institutions matter, Jensen and Meckling (1979, p. 480) wrote,

Ignoring the agency costs of alternative contractual forms in comparing two systems where the only difference between the two is the contractual form allowed is unlikely to shed light on the major issues. But Dreze, as well as most others writing on the topic, does exactly this.

The analysis of this paper shows that *the length of bank credit* (or any other financial claim) and *the employees' time horizon* are the two critical variables for the employees' choice of investments. And those two variables are specific to the bundle of property rights in the labor-managed firm.¹¹

With respect to externally financed investments, the analysis shows that when the length of bank credit exceeds the employees' time horizon and the employees' time horizon falls short of the pro-

¹⁰As in the case of externally financed investments, equivalent-return projects which pay off quickly would be favored relative to those whose payoffs occur later in the future.

¹¹When the employees' time horizon is greater than the productive life of assets, the relationship between (t) and (n) would determine whether an inefficient investment is chosen.

ductive life of assets, the labor-managed firm has incentives to finance inefficient investment projects. The fact that the labor-managed firm has not emerged voluntarily on a significant scale in private-property, free-market economies is evidence that the market for business organizations considers the length of bank credit to be greater than the employees' time horizon, the employees' time horizon to be shorter than the productive life of assets, and the lender's incentives insufficient to offset the employees' incentives to seek loans in excess of their time horizon.

The labor-managed firm would avoid making inefficient investments *only if* the prevailing incentives and transaction costs pushed the employees toward equalizing the length of bank credits with the expected life of capital goods to be purchased with those credits. For that to happen, several conditions have to be satisfied. First, the employees of the labor-managed firm must have incentives to negotiate contracts that would equalize the length of bank credits with the life of assets to be purchased with those credits. It is clear from the analysis in this paper that the employees *do not have* such incentives. Second, the cost of information to the lender about the expected life of capital goods, including intangible assets, must be low relative to that of the borrower. However, the absence of tradeable claims in financial markets raises the lender's information costs about both the productivity as well as the life expectancy of capital goods to be financed by loans. Finally, the lender must have strong incentives to incur the cost of negotiating contracts that would equalize the length of his loans with the life of assets to be purchased with those loans. There are many possible types of lending institutions, such as private-ownership banks, labor-managed banks, various financial institutions, government agencies, and specialized super banks. The analysis of all those types of lenders and their incentives is beyond the scope of this paper. It is, however, difficult to envisage a bundle of rights in all those lending institutions that would create incentives and transaction costs sufficient to change this paper's conclusions.

References

- Benelli, Giuseppe; Loderer, Claudio; and Lys, Thomas. "Labor Participation in Corporate Policy-Making Decisions: West Germany's Experience with Codetermination." *Journal of Business* 60 (1987): 553-75.
- Brunner, Karl. The Limits of Economic Policy. In *Socialism: Institutional, Philosophical and Economic Issues*, pp. 33-54. Edited by Svetozar Pejovich. Dordrecht: Kluwer Academic Publishers, 1987.

- Dreze, Jacques. "Some Theories of Labor Management and Participation." *Econometrica* 44 (November 1976): 1125-39.
- Flakierski, Henryk. *The Economic System and Income Redistribution in Yugoslavia*. Armonk, N.Y.: M.E. Sharpe, 1989.
- Furubotn, Eirik. "The Long-Run Analysis of the Labor-Managed Firm: An Alternative Interpretation." *American Economic Review* 66 (March 1976): 104-23.
- Furubotn, Eirik, and Pejovich, Svetozar. "Property Rights and the Behavior of the Firm in a Socialist State." *Zeitschrift für Nationalökonomie* 30 (1970): 431-54.
- Jensen, Michael, and Meckling, William. "Rights and Production Functions: An Application to Labor-Managed Firms and Codetermination." *Journal of Business* 52 (1979): 469-506.
- Meade, James. "The Labor-Managed Firm in Conditions of Imperfect Competition." *Economic Journal* 84 (December 1974): 817-24.
- Milovanovich, Milic. *Teorija i Praksa Samoupravljanja*. Beograd: Naučna Knjiga, 1990.
- Pejovich, Svetozar. "The Firm, Monetary Policy and Property Rights." *Western Economic Journal* 7 (September 1969): 193-99.
- Pejovich, Svetozar. "A Property Rights Analysis of the Yugoslav Miracle." *Annals* 507 (January 1990): 123-32.
- Pejovich, Svetozar. "A Property Rights Analysis of the Inefficiency of Investment Decisions by Labor-Managed Firms." *Journal of Institutional and Theoretical Economics* 148 (March 1992): 30-41.
- Prasnikar, Joze, and Svejnar, John. "Workers' Participation in Management vs. Social Ownership and Government Policies." Working Paper no. 264, Department of Economics, University of Pittsburgh, 1990.
- Vanek, Jaroslav. *The General Theory of the Labor-Managed Economy*. Ithaca: Cornell University Press, 1970.
- Vanek, Jaroslav. *The Labor-Managed Economy*. Ithaca: Cornell University Press, 1977.
- Vanek, Jaroslav. "Beware of the Yeast of the Pharisees." *Ekonomaska Analiza* 24 (1990): 113-24.