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Privatization Incidence, Ownership Forms, and Firm Performance: Evidence from Slovenia[1]

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There is active debate in transition economies about the extent to which employee and foreign ownership ought to be encouraged or discouraged in privatization, but empirical evidence is scarce. This paper employs a unique data set on Slovene firms during an early period of ''spontaneous privatization.'' Characteristics of the incidence of employee and foreign ownership and associated firm performance are examined. The paper controls for simultaneity between privatization and firm performance using a two-stage Tobit least-squares procedure. An elasticity of output with respect to ownership type is estimated. A percentage point increase in foreign ownership is associated with about a 3.9% increase in value-added and for employee ownership with about a 1.4% increase; there is evidence of diminishing marginal productivity gains for both forms of ownership. *J. Comp. Econom.,* October 1997, **25**(2), pp. 158–179. George Washington University, Washington, DC 20052; Academy of Entrepreneurship, Slovenia, and World Bank, Washington, DC 20433. © 1997 Academic Press

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1. INTRODUCTION

Most transition economies of Central and Eastern Europe state as official policy their intention to attract additional direct foreign investment and many

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offer substantial incentives to encourage it (Froot, 1994; Rondinelli, 1994). However, as in most countries, there is an active debate in transition economies over whether the foreign ownership share is too large, whether most of the benefits of direct foreign investment go to foreign nationals, and whether a large foreign ownership share might produce some negative externalities for economic policy and for development more generally (Meier, 1995; Welfens and Jasinski, 1994).

At the same time, both minority and majority employee ownership is growing dramatically in Central and Eastern Europe, where privatizations to employees are common, and almost all transition economies provide special incentives to encourage employees to purchase at least some percentage of the shares of the state-owned firms in which they work (Lee, 1991; Im et al., 1993; Smith, 1994b). Some economists are concerned that a large ownership role for employees in transition economies could perpetuate old inefficiencies or introduce new ones (Lipton and Sachs, 1990). Another concern is that significant employee ownership might deter foreign investment (Smith, 1994b). Yet the policy debate on foreign ownership often takes place in an entirely separate arena from that of employee ownership.

This paper examines efficiency effects of both employee and foreign share ownership including the possible complementarities and conflicts that may exist between them, using econometric evidence from Slovenia. Such effects are likely to be particularly important in a transition economy. A unique data set consisting of all manufacturing firms in Slovenia for which complete data are available over a four-year period from 1989 to 1992 is used to examine privatization incidence and firm performance in an early period of the transition to a private market economy. During this period, firms were privatized in a decentralized and unregulated manner while the majority of ''socially'' owned firms[2] remained unprivatized. The paper offers three methodological innovations. First, it may be not just the presence or absence of employee or foreign ownership shares that matters. The interaction of these forms of ownership types may have a significant impact on performance. Second, ownership is not an exogenous variable in company perfor-

discussions on the case of Slovenia, or useful comments on two early drafts of this paper. Travel support from the International Research and Exchanges Board (IREX) is gratefully acknowledged. The views expressed in this study are those of the authors and do not necessarily reflect those of the World Bank, its affiliated organizations, or members of its Board of Executive Directors or the countries they represent. All responsibility is held by the authors alone.

[2] In Slovenia, as in other former Yugoslav republics, non-privatized firms and the non-privatized share of firms were considered ''socially owned'' rather than government property. This definition derived from the nominally ''self-managed'' economic system of Yugoslavia. While employees and managers received the residual claim on profits in the firm, they technically did not own the firm's assets; instead assets were owned by ''society.'' The relatively high rate of investment in Yugoslavia until the 1980's is probably attributable to legal regulations requiring high reinvestment of retained earnings (Uvalic, 1993).

mance. Potential foreign investors and prospective employee owners will consider the characteristics of firms before deciding to purchase them. Moreover, since a majority of firms have neither employee ownership nor foreign ownership, standard instrumental variables techniques would produce downward bias in predicted ownership levels. This paper controls for the simultaneity between ownership type and firm performance using a two-stage Tobit least-squares procedure. Third, we calculate an elasticity of value-added with respect to ownership share using parameters estimated from production function analysis.

In Section 2, we review the debate on foreign and employee ownership and consider the potential implications of their interaction within firms. In Section 3, we discuss the case of Slovenia and describe the data set. In Section 4, we present the econometric methodology and the results. Finally, in Section 5, we summarize our results and suggest directions for further research.

2. FOREIGN AND EMPLOYEE OWNERSHIP: HYPOTHESES ON COMPARATIVE ADVANTAGES

In this section, the argued benefits and costs of foreign ownership and employee ownership in transition economies are reviewed, and the economics of joint ventures (JVs) involving combinations of these ownership types are considered. Direct foreign investment (DFI) is undertaken by multinational corporations (MNCs), that, by definition, manage production units in more than one country. Hence, DFI includes JVs and management contracts but not licensing or exporting. In the conventional theory of DFI (Caves, 1980), MNCs hold monopolistic advantages of sufficient magnitude to offset inherent informational and other disadvantages of operating outside a firm's national home base.

The presence of foreign firms creates both benefits and costs for development. Some potential advantages of a significant presence of MNCs for economic development include their role in filling three ''development gaps,'' namely, foreign exchange, investment, and the tax base. In addition, MNCs facilitate the transfer of technology and skills, provide modern sector employment, and increase competition by providing better quality goods. MNCs may also play a vital role in helping to realize a country's comparative advantage by supplying complementary inputs, access to intermediation services, output market access, and management skill.

On the other hand, potential disadvantages of MNCs include the high percentage of capital raised locally, concerns that most of the benefits go to foreign nationals (Bornschier, 1980), the presence of subsidiary export restriction requirements, tax avoidance through creative transfer pricing, and disruption of domestic stabilization and other economic policy. Some critics also claim that MNCs use an inefficient capital-intensive technique that, together

with the crowding out caused by reliance on local capital markets, could lead to declines in modern sector employment (Todaro, 1993, Ch. 15). Porter (1990) argues that a substantial domestically owned sector is almost a prerequisite for development.

Whether the benefits of DFI outweigh the costs for a given country, industry, or project is an empirical question. Many of the potential costs of foreign ownership, such as a high use of imported intermediate inputs, decline over time as the MNC learns which local suppliers have reliable quality and delivery times. Since foreign ownership was severely restricted prior to transition, its net benefits are likely to be larger in transition economies than in economies with more established markets. However, these benefits may be realized only with a time lag. Although our firm-level data is unable to measure either positive or negative externalities of foreign ownership, we are able to estimate the efficiency effects within the firm of increasing or decreasing the DFI share, which is an important part of this debate.

Since employee owners receive a share of profits and capital gains, employee ownership may provide positive short- and long-run incentives for effort, innovation, and specific human capital formation. But since profits are more variable than conventional wage payments, income risk borne by workers would increase, and sufficient productivity gains would be needed to compensate with higher incomes (Smith, 1988, p. 47). Moreover, risk aversion could lead employee-owners to underinvest and may lower flexibility.

In some transition economies, employee ownership may effectively provide workers with property rights to their jobs. During the transition, when alternative wages are low, the cost of job loss to a worker is high. Although profits and capital gains may also be highly variable during the transition period, employment risk may be a greater concern to workers. Thus, despite its income risks, many workers may favor employee ownership as a strategy to protect their jobs. An obvious disadvantage is that effective property rights to employment may reduce the flexibility needed for restructuring.

Foreign, employee, and other forms of ownership, or combinations of these forms in JVs, may offer a firm organizational comparative advantages in various market niches (Smith, 1994a). In general, JVs increase transaction costs but provide opportunities for gains from trade in the advantages available from different forms of ownership. The presence of a limited share of employee ownership can increase or decrease the attractiveness of a firm's shares to foreign buyers, depending on conditions in the firm and the economy. Obviously, foreign investors may be concerned that employee owners will have a greater relative stake in increasing wages than in raising profits. Such a conflict of interest will occur when an employee's share in the wage bill exceeds his or her share in company dividends plus capital gain (Nuti, 1995). Moreover, there is concern that workers will otherwise fail to take the conventional shareholder's point of view, e.g., holding a shorter time horizon in investment decisions or opposing profitable layoffs,

a potentially acute problem when firms have a history of paternalistic employment relations.[3]

On the other hand, many U.S. and U.K. firms are familiar with Employee Stock Ownership Plans (ESOPs) and similar programs in their home countries and may have introduced such plans in their own companies or observed such steps in firms with which they are familiar. Employee ownership has become a standard and customary part of business practice in the United States (Blasi and Kruse, 1991; Blasi et al., 1996). Some U.S. firms with ESOPs have deliberately established ESOPs in transition economies (Smith, 1994b). At least some firms introduce employee ownership to improve labor relations and efficiency; econometric evidence shows consistently a modest but positive effect of employee ownership on company performance, at least when employee ownership is combined with decision-making participation (Conte and Svejnar, 1990). When new foreign investors are concerned that the existing labor force has uncertain loyalties and the labor force views change with some apprehension, an employee ownership share may play an important labor relations role. This may be especially significant in countries in which employees are accustomed to having at least a nominal voice in decision making, e.g., through works councils. Further, the perceived risk of renationalization may be a significant factor inhibiting foreign participation in privatization, especially in countries considered to be politically polarized or unstable. Where employee ownership is present, employees are likely to resist renationalization and their presumed political clout may increase investor confidence. Finally, employee stock purchases represent a positive market signal to potential investors from a group possessing unique insider information.

Developing countries have often mandated JVs as a strategy for increasing benefits and decreasing opportunity costs of DFI; typically the foreign share has been limited to 49% in the belief that this will keep effective control of the subsidiary's operations in domestic hands. Given potential bargaining over input and output transfer pricing, such laws may have little effect in practice on either allocation or division of profits (Svejnar and Smith, 1984). Moreover, considerations of efficient ownership were probably not a major factor in JV legislation, but rather constraints were based on a belief that it was better to keep majority ownership in domestic hands. The efficiency effects of JV arrangements have received little attention in the empirical literature.

In recent years, many transition economies and developing countries, including Slovenia, have rolled back regulations limiting foreign ownership shares. Despite this, MNCs often enter voluntarily into JV agreements. Ab-

[3] If the JV includes a labor-managed firm, as was at least nominally the case in Slovenia well into the transition period examined in this study, different objectives can lead to more fundamental conflicts over allocation decisions, although this finding is highly sensitive to assumptions (Svejnar and Smith, 1982).

stracting from the external effects on development, the advantages of having some fraction of both employee and foreign ownership suggest that, if transaction costs are not too high, JVs may secure greater productivity gains than would prevail at a corner solution of either zero or 100% for either foreign ownership or employee ownership. In transition countries such as Russia, the preference for JVs on the part of domestic investors has been attributed partly to their clearer statement of property rights in contrast to the more eclectic structures emerging from mass privatization.

These considerations together do not lead to definitive predictions about efficient ownership types because such arguments depend on the technology, industrial relations, management skill, intermediation access, and output market access of the firm, as well as on the economy's stage of development and on the type of business venture under consideration. Moreover, firms cannot be assumed to be in an ownership equilibrium at an early stage of the transition.[4] Even under more stable economic conditions, the market for corporate control would not ensure an efficient ownership structure in equilibrium so that one cannot infer that whatever is observed is efficient.[5] In sum, the costs and benefits of ownership form cannot be resolved through economic theory, so we turn our attention to the data set and econometric strategy.

3. THE CASE OF SLOVENIA AND THE DATA SET

The data set is derived from income statements and balance sheets for the universe of all manufacturing in firms in Slovenia over a four-year period from 1989 to 1992. The data reflect the impact of ''spontaneous privatization'' in Slovenia from 1989 to 1992. The company law of December 1988 permitted transfer of social capital to private forms but left the decision to privatize up to the workers' councils and company managers of the individual enterprises. From late 1992 until late 1994, there was virtually no privatization as a new, more formal, law was implemented slowly. Of course, a large number of new private firms entered the market during this period.

In Table 1, we present descriptive statistics on the sample. The data set is broad both in its sample base and the type of variables included, but it does have two limitations. First, as the table indicates, in each year a majority of firms had to be eliminated from the analysis due to incomplete data.[6] Of the

[4] Note, for example, that Russian enterprises have exhibited high ownership turnover in the period following privatization (Blasi, 1995).

[5] The proposition that the market for corporate control ensures efficiency (Jensen and Ruback, 1983) is controversial even under the most developed market arrangements (e.g., Brudney, 1985).

[6] Some firms proved to be dummy corporations or firms not yet in operation. This problem was solved largely by eliminating all firms reporting either no labor or no capital. Observations were lost for the productivity analysis because of the lagged instrumental variables techniques used.

TABLE 1

DESCRIPTIVE STATISTICS: INCIDENCE OF OWNERSHIP IN THE SAMPLE

Number of firms in:	1989	1990	1991	1992	Pooled
All firms	2,795	3,709	6,538	9,693	22,735
All manufacturers	1,057	1,070	1,534	2,035	5,696
Incidence analysis	863	694	1,011	1,224	2,929
Productivity analysis	374	374	487	684	1,545
Some employee ownership	24 (12)	74 (46)	180 (73)	134 (89)	388 (208)
Some foreign ownership	15 (9)	25 (11)	25 (13)	30 (22)	80 (46)
Some employee ownership and foreign ownership	5 (4)	12 (6)	15 (8)	22 (15)	49 (29)

Note. The values in parentheses are the numbers of firms for productivity analysis.

remaining firms, a relatively small number reported a combination of both employee and foreign ownership, though this number increased steadily during the sample period. Second, we do not have an exact characterization of employee ownership but only a good proxy variable. There were four types of ownership in the study period, namely, foreign, social (or non-privatized), proprietorship, and domestic. Slovene officials report that most of the domestic category is employee ownership and that most employee ownership falls under the domestic ownership category.[7] Thus, in the analysis, we use the Slovene accounting category ''domestic ownership'' as a proxy for employee ownership.

Since a large number of firms had to be deleted, the question arises as to whether the sample differs from the population universe in important ways. Table 2 contains the results of *t*-tests on differences between means for key variables in the universe of firms reporting positive capital and labor, and in the sample.[8] The number, *N*, in the last row of the table indicates the total

[7] Interviews with privatization officials and other Slovene authorities were conducted by Stephen Smith in 1994, and by Milan Vodopivec in 1993–1994 and early 1997. Essentially all employee ownership that results from privatization, as distinct from new start-ups including employee ownership, falls under this category. Hence, any employee ownership we miss is likely to occur within new start-ups. Slovene authorities claim that much of the small portion of domestic ownership not directly accounted for by employee ownership represents (treasury) shares held internally by employee-owned firms.

[8] Results reflect the *p*-values from *t*-tests under the null hypothesis that the means of the variables for two groups are equal. The *t*-statistic under the null is

$$t = \frac{x_{i1} - x_{i2}}{(s_{i1}^2/n_1 + s_{i2}^2/n_2)^{1/2}},$$

TABLE 2

T-TEST OF EQUAL MEANS FOR TWO GROUPS: DATA FOR ALL MANUFACTURING FIRMS ($K > 0$ AND $L > 0$) VS DATA USED FOR INCIDENCE ANALYSIS

	1989	1990	1991	1992	Pooled
Workers	A	A	A	R** (−)	A
Capital	R*	R*	R*	R** (−)	R** (−)
VA	A	A	A	A	A
Employee ownership	A	A	A	R** (−)	R** (−)
Foreign ownership	A	A	A	A	A
Profits	R*	A	A	A	R**
N	1,057	1,070	1,534	2,035	5,696

Note. (1) Data for all industries includes firms for which $K > 0$, $L > 0$, and equity > 0. (2) R* and R** represent rejection of the null hypothesis (equal means of the two groups) at the 5% and 1% levels, respectively. (3) (−) indicates a smaller average of the variable for the firms in the sample used.

number of firms available for comparison. In general, the deleted firms are very similar to the sample as a whole except that they tend to have somewhat more capital and employee ownership but less profit.

In Table 3, we compare data available for incidence analysis with that available for productivity analysis. Again, samples are broadly comparable, although there is a tendency for firms in the latter group to exhibit higher employment and higher value-added than those in the former.

To gain a perspective on the data, we investigated the origins of foreign and employee ownership in Slovenia. Foreign ownership in the sample stems from JVs started as new firms or from sales initiated by socially owned firms and approved by the privatization agency. Proceeds of these sales went to a privatization fund that could reinvest a part of the proceeds in the firm as a long-term loan or in preferred shares. Decisions by MNCs to invest in Slovenia typically proceed in stages with 79% of foreign investors reporting previous business cooperation in Slovenia, in general, and 49% reporting substantial previous business cooperation with the Slovene JV partner company, in particular (Rojec et al., 1993, pp. 7–9). Most previous arrangements included foreign trade and often were upgraded further to industrial co-production or licensing agreements. About two-thirds of these cases involve acquisitions of shares in existing firms and one-third represent greenfield JVs.

Employee-owned firms in the sample were created by two methods. Under an ''asset drop,'' the enterprise was transferred to a holding company, i.e.,

where x_{i1} is the mean of the ith variable in the first group, s_{i1} its variance, and n_1 the number of firms in the first group.

TABLE 3

T-TEST OF EQUAL MEANS FOR DATA USED IN INCIDENCE ANALYSIS VS DATA USED IN PRODUCTIVITY ANALYSIS

	1990	1991	1992	Pooled
Workers	A	R**	R*	R**
Capital	A	A	A	A
VA	A	R**	R*	R**
Employee ownership share	A	R** (−)	A	R* (−)
Foreign ownership share	A	A	A	A
Profits	A	R*	A	A
N	694	1,011	1,224	2,929

Note. (1) Data for all industries includes firms for which $K > 0$, $L > 0$, and equity > 0. (2) R* and R** represent rejection of the null hypothesis (equal means of the two groups) at the 5% and 1% levels, respectively. (3) (−) indicates a smaller average of the variable for the firms in the sample used.

assets, employees and operations were transferred to the new subsidiary. The parent and formerly socially owned enterprise shell then sold the enterprise to managers and employees. Under a ''net worth transfer,'' the socially owned enterprise transferred social capital to a newly created enterprise in which it held preferred shares, so that its equity was effectively replaced by debt. New common shares were issued to workers and managers. The majority of the net worth was still held by the socially owned firm, although insiders could retire debt, possibly at a discount.

The methods by which employee and foreign ownership were combined in a single company are varied in practice, but many stem from Yugoslav JV law prior to Slovene independence. Because the former Yugoslav system consisted of labor management without formal employee ownership, MNCs contracted JVs with socially owned firms, and thus formal foreign ownership often predates formal employee ownership in the sample. In such cases, the foreign ownership portions were typically formed by new investments in a Slovene socially owned firm, while employee ownership portions were later created by privatizing existing socially owned shares to workers. To gain more insights, we carried out detailed interviews in two firms with both employee and foreign ownership.[9]

The first firm is IBP Zalec, the Coca-Cola bottler for Slovenia, employing 150 workers.[10] The company was privatized as a fifty–fifty joint venture,

[9] These on-site interviews were carried out in June 1994; for details, see Smith (1994b).

[10] The company's CEO, his assistant, the president of the workers' council, the managing director of the firm's outside consulting company, and a representative of the investors were interviewed.

with 60% of the domestic shares held by employees and management. The foreign investor holds the right of first refusal to purchase shares offered for sale by employees. The CEO and the president of the workers' council agreed that employees would likely sell a significant percentage of their shares as soon as they became legally eligible to do so. They conjectured that employees would continue to hold 20 to 25% of the company shares in the long run and that the foreign partner would purchase all the shares that the workers wished to sell. Coca-Cola representatives stated that they had long favored employee ownership in Slovenia, based partly on its motivational effects. Coca-Cola representatives also objected to state ownership and viewed support for employee ownership as a tactic to eliminate the state role as quickly as possible. In addition, the CEO stated that workers ''feel it is their company'' because of the history of workers' councils in Slovenia and ''would be disappointed'' not to have an ownership role. The foreign partner is providing employees credit toward purchasing shares in the JV that formally began in 1994. The president of the IBP workers' council anticipated that there will be little change in work and decision-making practices after privatization despite the fact that the new enterprise council will have only a nonbinding advisory role. The company has operated for many years as a JV and neither management nor employees expected changes in operations after privatization.

The second firm is Belinka Chemicals, a 250-employee JV with the Belgian multinational Solvay. Although Solvay has just 20% ownership in the JV subsidiary, it has a 50% voting stake. The JV began in 1977 and has operated as a joint stock company under the *Lastninjenje* program since 1990.[11] Because of its high capitalization, the company anticipates that only 8% of the shares will remain eventually in the hands of employees. Solvay plans to increase its share to 51%; it has no objection to employee ownership, even though it lacks the enthusiasm of Coca-Cola.

4. ECONOMETRIC METHODOLOGY AND RESULTS

In this section, we present our econometric methodology and results. In the recent economics literature, a number of studies have examined the effects of employee ownership on firm performance in OECD countries. Some of these studies have had available only qualitative data that indicated whether the firm had either zero or any positive level of employee ownership. Other studies have included continuous variables of employee ownership shares, that were entered directly or as interactive variables with the labor input, in an otherwise standard production function. Generally, employee ownership has been found to have modest positive effects when employee participation

[11] The literal translation of this program is ''ownershipization''; the practice is intended to formalize shareholding.

in decision making is also present (Conte and Svejnar, 1991). In these studies, employee ownership is usually the only alternative ownership variable considered. A few studies have examined the determinants and comparative efficiency of foreign ownership in developing countries (Levy, 1988; Jenkins, 1990; Lucas, 1993). This paper examines efficiency effects of both employee and foreign ownership in a transition economy in which both ownership forms have practical significance.

First, using a strategy that appears to be new to the literature, we consider the production function results to shed light on the efficient level of ownership types, holding labor and capital inputs constant. We calculate an elasticity of value-added with respect to changes in ownership share. Allowing for nonlinearity in the production function permits the ownership variables to exhibit a positive effect in some size ranges and a negative effect in others and the interaction effects between ownership types to be captured.

Second, ownership is not an exogenous variable in company performance. Potential foreign and employee owners will consider the characteristics of firms before deciding to purchase them. This observation must be true *a fortiori* in a major privatization program because there are many firms on the market and little time both for reliable information about firms to be revealed to non-insiders and for margins to be closed fully. Moreover, since a majority of firms have neither employee nor foreign ownership, standard OLS instrumental variables techniques would produce downward bias in predicted ownership levels. Thus, we control for simultaneity between ownership type and firm performance using a two-stage procedure. In the first stage, we use a Tobit-censored regression model (Maddala, 1983) to predict ownership shares. In the second stage, we use these predicted ownership values as explanatory variables in productivity analysis. A related Tobit analysis also sheds light on the incidence of spontaneous privatization.

Third, as Section 2 argues, it is not just the presence or absence of ownership forms such as employee or foreign ownership that matters, but the interaction of ownership types may also have a significant impact on performance.

We first turn our attention to the determinants of employee and foreign ownership, using a two-limit Tobit model. This procedure is required because a large number of firms in the sample have either no employee ownership or no foreign ownership and because ownership share is confined to the [0, 1] interval, creating a truncated regression. The two-limit Tobit model (Maddala, 1983) is defined as

$$y_{it}^{*} = \beta' X_{it} + u_{it}, \tag{1}$$

where the likelihood function for β is given by

$$L = \prod_{y_j=0} F\left(\frac{-\beta' X_i}{\sigma}\right) \prod_{y_j=y_j^{*}} \frac{1}{\sigma} f\left(\frac{y_i - \beta' X_i}{\sigma}\right) \prod_{y_j=1} \left\{1 - F\left(\frac{1 - \beta' X_i}{\sigma}\right)\right\}. \tag{2}$$

TABLE 4

INSTRUMENTAL VARIABLES PREDICTION OF OWNERSHIP SHARE: 1989–1992

	Employee share		Foreign share	
Independent variables	OLS	TOBIT	OLS	TOBIT
Ln (export)	0.004***	0.033*	0.001**	0.044***
	(2.85)	(1.87)	(2.48)	(2.61)
Ln(revenues)	0.016***	0.293***	−0.001	0.009
	(3.38)	(4.61)	(−0.82)	(0.16)
Ln(profits)	0.003	0.054*	0.001*	0.061**
	(1.37)	(1.73)	(1.89)	(2.08)
Ln(*K*/*L*)	−0.004	0.013	−0.000	0.056
	(−1.20)	(0.32)	(−0.30)	(1.43)
Ln(wage bonus)	−0.009***	−0.087***	−0.000	−0.002
	(−4.43)	(−3.65)	(−0.34)	(−0.12)
Ln(inventory/revenue)	0.004**	0.028	0.001**	0.026
	(2.46)	(1.40)	(2.03)	(1.45)
Ln(long term domestic credit)	0.010***	0.140***	0.003***	0.090***
	(3.23)	(3.25)	(3.03)	(2.55)
Ln (long term foreign credit)	−0.004**	−0.028	0.001*	0.054***
	(−2.22)	(−1.40)	(1.89)	(3.04)
Ln(short term domestic credit)	−0.000	−0.014	−0.001**	−0.029*
	(−0.21)	(−0.69)	(−2.53)	(−1.79)
Ln(short term foreign credit)	−0.003	−0.040	0.004***	0.032**
	(−1.03)	(−1.38)	(5.65)	(1.96)
Ln(long run credit to liability ratio)	−0.008**	−0.112**	−0.004***	−0.163***
	(−2.22)	(−2.32)	(−4.13)	(−3.85)
Year 90	0.076***	1.559***	0.015***	0.744***
Year 91	0.179***	2.619***	0.015***	0.863***
Year 92	0.145***	2.392***	0.019***	−0.487**
σ		1.560***		0.754***
		(17.67)		(10.70)
Log-likelihood		−1289.27		−323.86
Likelihood ratio		531.47***		217.61***
Adjusted *R*-squared	0.10		0.03	
N	3792	3792	3792	3792

Note. The figures in parentheses are *t*-statistics; *, **, and *** indicate the 10%, 5%, and 1% significance levels, respectively.

In (2), $f(\cdot)$ is a standard normal probability density function and $F(\cdot)$ is the cumulative density function.

The results of this maximum likelihood analysis are reported in Table 4 and are characterized by eight notable points concerning foreign or employee ownership or both, four of which were predicted by theory and four of which were not.

First, as expected, exports are positively related to both employee and

foreign ownership. Exports may well be viewed by potential owners as a good indication of the ability of a firm to survive the transition process. Second, profits are positive and statistically significant in both the foreign and employee ownership equations. This result suggests that more profitable firms are considered more attractive candidates for privatization, especially under conditions of spontaneous privatization. Third, not surprisingly, firms with more long- and short-term foreign credit tend to be more likely to exhibit foreign ownership. Characteristics that make a firm a candidate for foreign credit are also likely to make a firm a candidate for DFI, while one of the significant benefits that foreign ownership can confer is greater access to credit markets. On the other hand, foreign credit is not a significant predictor of employee ownership. Among other things, this finding suggests that firms with employee ownership receive improved access to foreign credit markets when they form a JV with a foreign firm. Fourth, the bias of coefficient estimates toward zero when using ordinary least squares to obtain predicted values for ownership shares can be seen dramatically in Table 4. The term σ in the Tobit estimation of Eq. (2) is large and highly statistically significant in both Tobit equations.

There were also unexpected findings. First, revenues are positive and statistically significant in the employee ownership equation, but not for foreign ownership. The sign on employee share might be expected to be reversed, since the productivity gains from employee ownership are generally thought to be more easily realized in smaller firms.[12] However, this finding does not take account of nonlinearities or interaction effects; the firm performance results of the next section offer a better perspective on this matter. Second, the capital–labor ratio is generally not significant in either the employee ownership or the foreign ownership equation. Theory suggests that employee-owned firms will tend to produce in a less capital-intensive manner, and foreign-owned firms with a more capital-intensive technique. Third, the long-term credit-to-liability ratio is negative and significant in both the foreign and the employee ownership equations. It is unclear why this should be the case; the data are not adequate to distinguish among alternative hypotheses including the possibility that the association simply reflects debt associated with takeovers. Fourth, the higher the level of wage bonuses, the lower the incidence of employee ownership. The level of wage bonuses is generally an insignificant predictor of foreign ownership. These results are perhaps surprising, since wage bonuses may be an indicator of employee rents, but we do not have institutional data to confirm how these bonuses are determined in relation to wages or what they reflect.[13]

[12] Incentive effects operate through observable cooperation among the employees (Aoki, 1984).

[13] In the sample, bonuses have a positive correlation of about 0.3 with wages and about 0.5 with profits. Case study interviews failed to clarify any systematic criteria used in determining the size of these bonuses.

We next turn our attention to the effects of ownership type on firm performance; we estimate and interpret an elasticity of value-added with respect to ownership shares.

After specification tests, we use a translog production function

$$\ln(VA) = \beta_0 + \sum_{i=1}^{n} \beta_i \ln(x_i) + \frac{1}{2} \sum_{i=1}^{n} \sum_{j=1}^{n} \beta_{ij} \ln(x_i) \ln(x_j) + \epsilon, \quad (3)$$

where VA stands for value-added and X_i represents either an input or the share of a type of ownership. Given the symmetric conditions, i.e., $\beta_{ij} = \beta_{ji}$ for all i and j if i is not equal to j, we get the specification

$$\begin{aligned} \ln(VA) = {} & \beta_0 + \beta_1 \ln(L) + \beta_2 \ln(K) + \beta_3 EO + \beta_4 FO \\ & + \frac{1}{2} \beta_{11} [\ln(L)]^2 + \frac{1}{2} \beta_{22} [\ln(K)]^2 + \frac{1}{2} \beta_{33} (EO)^2 + \frac{1}{2} \beta_{44} (FO)^2 \\ & + \beta_{12} \ln(L) \ln(K) + \beta_{13} \ln(L)(EO) + \beta_{14} \ln(L)(FO) + \beta_{23} \ln(K)(EO) \\ & + \beta_{24} \ln(K)(FO) + \beta_{34} (EO)(FO) + \epsilon, \quad (4) \end{aligned}$$

where L stands for labor, K for capital, EO for employee ownership, and FO for foreign ownership.

All of the right-hand-side variables in Eq. (4) are, in theory, endogenous, and thus an instrumental variables approach is used. In previous studies of employee ownership, ownership share has usually been taken to be an exogenous variable. In some previous studies, instrumental variables have been used to predict ownership shares, and these predicted values have been used in subsequent production function estimates.[14] However, even when instrumental variables have been used, studies have generally employed ordinary least squares to predict ownership shares despite the fact that many firms will have a zero share of some or most ownership types.[15] The majority of the firms will have no foreign ownership. In our sample, a majority of firms remain unprivatized, so they will have zero employee ownership. As a result, OLS predictions of ownership shares will be biased toward zero. As a remedy, we employ a two-stage Tobit least-squares procedure. In the first stage, Tobit regressions using lagged instrumental variables are estimated to predict ownership shares. This differs from the procedure above in that we now use lagged rather than current values of the balance sheet variables. Current values of some of the balance sheet instruments may be endogenous with respect to firm productivity, but this is unlikely to be a problem when lagged variables

[14] Some studies have used instruments for employee-participation variables, for example, Estrin *et al.* (1987), but few have used them for factor inputs such as labor and capital.

[15] An exception is Fitzroy and Kraft (1987); however, this paper did not appear to use instruments for labor and capital, which are also endogenous variables.

are used. Capital and labor are predicted with instrumental variables using ordinary least squares.[16]

We conducted specification tests on the translog form. If $\beta_{ij} = 0$ for all i and j, the translog production function reduces to the Cobb–Douglas form. F-test results indicated rejection at the 1% level of the null hypothesis that the Cobb–Douglas production is the appropriate specification, suppressing ownership variables. Moreover, when employee and foreign ownership variables were included (up to the first order for the Cobb–Douglas and up to the second order for the translog), again the translog production function was selected over the nested Cobb–Douglas alternative. Finally, the null hypothesis that coefficients on the employee and foreign ownership variables in the translog form are equal to zero is rejected at the 1% level for the pooled sample.[17] Finally, the Hausman (1978) exogeneity test indicated rejection of the null hypothesis that the ownership share variables, and the input variables capital and labor, are jointly exogenous. These results were predicted by theory and confirm that our two-stage estimation procedure is necessary.[18]

In Table 5, we report coefficient estimates of the second-stage translog production functions given in Equation (3). The regressions include industry dummy variables that are jointly significant.[19] The adjusted R^2 ranges from 83 to 86%. In the pooled regression, foreign ownership is positive and significant, while the square of foreign ownership share is negative and significant. Employee ownership is positive and almost significant at the 10% level, while the square of employee ownership share is negative and significant. Thus, productivity benefits increase at a decreasing rate as both employee and foreign ownership are individually increased. None of the four interactions between ownership variables and factor inputs are individually significant; however, they are jointly significant. Holding the individual effects of foreign and employee ownership constant, the interac-

[16] We used a list of lagged balance sheet variables similar to that used for employee and foreign ownership incidence analysis, along with time, industry, and interactive dummies. The procedure produced excellent fits for both capital and labor. Results of these regressions are available from the authors.

[17] Results of all of these tests are available from the authors. Under Cobb–Douglas, coefficients on foreign and employee shares are both positive and significant, and the productivity effect of foreign ownership is about eight times greater than for employee ownership. We also examined whether the estimated translog coefficients imply monotonicity in the relevant range. The estimated function is monotonic for labor for 98% of firms, while monotonicity is satisfied for 73% of firms with respect to capital.

[18] However, results for labor and employee ownership were inconclusive; these variables may actually be individually exogenous. Results are available from the authors.

[19] The estimated coefficients for the 35 industry dummies are not reported here but are available from the authors.

TABLE 5

TRANSLOG PRODUCTION FUNCTIONS

Independent variables	1990	1991	1992	Pooled
$\ln(K)$	−0.135	0.668***	0.341***	0.307***
	(−0.779)	(2.897)	(2.733)	(3.593)
$[\ln(K)]^2$	0.038	−0.033	0.008	0.011
	(1.479)	(−1.075)	(0.434)	(0.907)
$\ln(L)$	0.338*	−0.113	0.468***	0.311***
	(1.641)	(−0.455)	(3.227)	(3.159)
$[\ln(L)]^2$	0.075*	0.065	0.103***	0.098***
	(1.848)	(1.571)	(3.209)	(5.140)
$\ln(L)*\ln(K)$	−0.049	0.021	−0.085*	−0.066**
	(−0.774)	(0.316)	(−1.837)	(−2.267)
Employee ownership share	0.794	−2.474	1.633	1.340
	(0.258)	(−1.199)	(1.291)	(1.584)
EO^2	1.860	−0.074	−2.298**	−1.615**
	(0.848)	(−0.065)	(−2.497)	(−2.281)
Foreign ownership share	15.299*	20.138	8.676	8.276**
	(1.643)	(1.519)	(1.126)	(2.144)
FO^2	2.036	−3.631	−9.337*	−4.634
	(0.235)	(−0.249)	(−1.652)	(−1.471)
EO*FO	−2.844	−6.269	1.073	1.305
	(−0.867)	(−0.771)	(0.302)	(0.584)
$EO*\ln(L)$	0.013	−0.675*	−0.322	−0.242
	(0.021)	(−1.646)	(−1.344)	(−1.375)
$EO*\ln(K)$	−0.143	0.627	0.236	0.148
	(−0.338)	(1.569)	(1.306)	(1.033)
$FO*\ln(L)$	3.861	4.082	−0.036	0.718
	(1.447)	(0.836)	(−0.023)	(0.786)
$FO*\ln(K)$	−3.789*	−3.471	−0.359	−0.988
	(−1.690)	(−0.908)	(−0.238)	(−1.294)
Industry dummies	Yes	Yes	Yes	Yes
Year 91				−0.645
Year 92				−1.026
Adj. R^2	0.857	0.844	0.833	0.857

Note. The figures in parentheses are *t*-statistics; *, **, and *** indicate the 10%, 5%, and 1% significance levels, respectively. EO stands for employee ownership share and FO stands for foreign ownership share.

tion of foreign and employee ownership has a positive effect but it is not statistically significant.[20]

The translog estimation yields a nonlinear relationship between the two input and two ownership independent variables; higher terms are jointly

[20] It is worth restating that we have a very limited number of firms in the sample with both employee and foreign ownership, e.g., 15 in 1992.

significant. Thus, the net effects of ownership are not easily discerned by examining individual coefficients. Yet it is natural to ask whether, on average and all else equal, firms would be predicted to have higher value-added with more or less employee or foreign ownership on the margin. To address this question, we consider the following three derivatives of the estimated translog function:

$$\frac{\partial \ln(VA)}{\partial(EO)} = \beta_3 + \beta_{33}EO + \beta_{34}FO + \beta_{13}\ln(L) + \beta_{23}\ln(K)$$

$$\frac{\partial \ln(VA)}{\partial(FO)} = \beta_4 + \beta_{44}FO + \beta_{34}EO + \beta_{14}\ln(L) + \beta_{24}\ln(K)$$

$$\frac{\partial \ln(VA)}{\partial EO \partial FO} = \beta_{34}. \tag{5}$$

These estimated derivatives provide an elasticity representing the percent increase in value-added generated by a percentage point increase in ownership shares.[21] Note that we have accounted for endogeneity in the choice of ownership forms. Thus, if the marginal cost of transferring a share of ownership from one form to another is negligible, in equilibrium, these estimated elasticities should be equal to zero. If they are positive, either firms are not in equilibrium or there are substantial transaction costs involved with changing shares of ownership from one form to another. In Table 6, these estimated elasticities with respect to ownership types are presented. On the margin, a percentage point increase in foreign ownership is associated with about a 3.9% annual increase in value-added. For employee ownership, the comparable elasticity is about 1.4%. Both elasticities are significant at the 1% level. These values are too large to be explained plausibly by the transaction costs of ownership change. Thus, further privatization to either foreign or employee owners should lead to increased efficiency with substantially larger effects on the margin from foreign ownership.

The extent to which the system of Yugoslav self-management was equivalent to formal employee ownership is controversial (Smith, 1994b). Certainly, employee ownership provides more conventional economic incentives than did Yugoslav self-management. But to the extent that they are similar, privatization to employees in Slovenia can be seen as ''putting old wine in new bottles.'' The fact that productivity gains are found under privatization to employee ownership would suggest that ''the bottle counts as well as the

[21] It is straightforward to manipulate these derivatives to obtain at least two alternative forms of elasticity measures that indicate a percent change in value-added for a percent change in the percentage of ownership, but this measure is perhaps less intuitive than a measure of percent change in *VA* for a percentile increase of ownership. Alternative measures yield qualitatively similar results.

TABLE 6

ELASTICITIES OF EMPLOYEE OWNERSHIP AND FOREIGN OWNERSHIP

	1990	1991	1992	Pooled
E(EO|actual employee ownership)	−0.273	−0.228	1.991***	1.410***
	(−0.253)	(0.006)	(2.737)	(2.850)
E(EO|predicted employee ownership)	−0.273	−0.229	1.978***	1.402***
	(−0.253)	(0.001)	(2.736)	(2.852)
E(FO|actual foreign ownership)	3.046	8.320**	6.334**	3.877***
	(0.668)	(1.922)	(1.982)	(2.285)
E(FO|predicted foreign ownership)	3.046	8.276*	6.340**	3.883***
	(0.668)	(1.914)	(1.984)	(2.287)

Note. The figures in parentheses are *t*-statistics; *, **, and *** indicate the 10%, 5%, and 1% significance levels, respectively. EO stands for employee ownership share and FO for foreign ownership share.

wine.''[22] Furthermore, our Slovene data may underestimate the benefits of employee ownership for economies in which it has not played a significant *de facto* role prior to privatization. However, it may be necessary to incur learning costs before the benefits of employee ownership are realized; such costs may have been defrayed effectively by earlier self-management experience. Resolution of this question must await analogous studies in other transition economies.

In Table 7, we present ownership share elasticities conditioned on subsets of the data. Comparing lines 1 and 3, the estimated value-added elasticity with respect to employee ownership is about 50% higher when there is no employee ownership than when some employee ownership already exists; this difference is significant at the 5% level. Comparing lines 8 and 10, the foreign ownership elasticity is about twice as large when there is no foreign ownership compared to when some foreign ownership is already present; this difference is significant at the 10% level. Moreover, comparing lines 5 and 11 with lines 6 and 12, the estimated value-added elasticities of both foreign and employee ownership are higher when both are present than when both are absent; however, only the foreign ownership difference is significant at even the 10% level. These findings suggest that there may be diminishing marginal benefits to the firm of foreign and employee ownership, both separately and in combination.

The large size of the estimated ownership elasticities makes it difficult to believe that Slovene firms were in ownership equilibrium during the sample period. Although there are undoubtedly costs associated with changing a

[22] We would like to thank an anonymous referee for suggesting this metaphor.

TABLE 7

CONDITIONAL ELASTICITIES OF EMPLOYEE AND FOREIGN OWNERSHIP

Average employee ownership and foreign ownership	1990	1991	1992	Pooled
E(EO|EO > 0)	−0.256	−0.213	1.117**	0.986***
	(−0.311)	(−0.336)	(2.430)	(2.601)
E(EO|FO > 0)	−0.984	−1.123	1.565*	1.186**
	(−0.772)	(−0.543)	(1.710)	(2.080)
E(EO|EO = 0)	−0.275	−0.232	2.107***	1.467***
	(−0.246)	(−0.276)	(2.707)	(2.850)
E(EO|FO = 0)	−0.251	−0.204	1.992***	1.409***
	(−0.232)	(−0.255)	(2.735)	(2.847)
E(EO|EO = 0 or FO = 0)	−0.261	−0.204	1.990***	1.407***
	(−0.241)	(−0.255)	(2.739)	(2.844)
E(EO|EO > 0 and FO > 0)	−0.958	−1.715	1.441	1.114*
	(−0.727)	(−0.657)	(1.356)	(1.775)
E(FO|EO > 0)	1.138	5.791	5.186**	3.123**
	(0.295)	(1.373)	(2.311)	(2.188)
E(FO|FO > 0)	−0.683	4.195*	3.367**	1.975**
	(−0.397)	(1.739)	(2.266)	(2.032)
E(FO|EO = 0)	3.314	8.714**	6.512*	4.002**
	(0.710)	(1.959)	(1.911)	(2.281)
E(FO|FO = 0)	3.159	8.388**	6.439**	3.942**
	(0.672)	(1.913)	(1.969)	(2.285)
E(FO|EO = 0 or FO = 0)	3.110	8.386**	6.419**	3.923**
	(0.672)	(1.917)	(1.974)	(2.284)
E(FO|EO > 0 and FO > 0)	−0.866	1.680	2.831**	1.827**
	(−0.830)	(0.692)	(2.390)	(2.188)

Note. The figures in parentheses are *t*-statistics; *, **, and *** indicate the 10%, 5%, and 1% significance level, respectively. EO stands for employee ownership share and FO for foreign ownership share.

percentage of ownership from one form to another, these costs are unlikely to be on the order of one to four annual percentage points of value-added. Thus, the results suggest that there are substantial further gains to be realized from decreasing the level of social ownership and increasing levels of foreign and probably employee ownership in Slovenia.

5. CONCLUSION

This study has examined the incidence and effects of foreign and employee ownership in Slovenia at the beginning of its post-socialist economy. The results showed that firms with higher revenues, profits, and exports were more likely to exhibit employee and foreign ownership in the early stages of

transition in Slovenia. Firms with more long- and short-term foreign credit are more likely to exhibit foreign ownership. This finding suggested that one gain to firms with employee ownership also having some foreign ownership is improved access to foreign credit markets.

An elasticity of output with respect to share of ownership type was estimated. On the margin, a percentage point increase in foreign ownership is associated with about a 3.9% increase in value-added, and for employee ownership with about a 1.4% increase. These effects are almost certainly too large to be explained by transaction costs of ownership change. Thus, the results offer support for continued privatization to foreign and employee owners. However, there is also evidence of diminishing marginal productivity gains for both forms of ownership.

Certainly, one should be very cautious about extrapolating from these elasticities. It remains to be seen how sensitive these estimates are to data sets and specifications. In particular, if the earlier system of self-management already incorporated some of the potential benefits of employee ownership, then the latter elasticity might prove larger for other economies that did not provide for employee financial participation in the past. On the other hand, the employee ownership estimates are perhaps more preliminary than those for foreign ownership because firms in the sample with employee ownership may differ somewhat from those in the universe. In addition, the estimated marginal benefits of additional ownership shares may change over time, as the economy becomes more fully marketized. Moreover, these elasticities are calculated holding labor and capital inputs constant; an ownership change could conceivably lead to changes in these levels over time. Of course, these results are from only one small transition economy at an early stage of spontaneous privatization; it remains to be seen whether they generalize to other economies and stages of the transition. Finally, we have no direct method of estimating the transaction costs of changing some part of ownership from one form to another. To the extent that such costs are positive, and perhaps differ by ownership type, interpretations of these results must be modified. For example, if the marginal cost of generating a percent increase of foreign or employee ownership is greater than that of other forms of ownership, this would offer an alternative explanation as to why we might observe positive ownership share elasticities of foreign ownership or employee ownership in equilibrium.

Because of the data limitations of this study, it will be of great interest to apply its methods to other transition and developing countries at a later point in their development, and, data permitting, to use dynamic as well as comparative static approaches to the measurement of effects of ownership changes. In future work, it may also be valuable to examine the characteristics of firms with ''too much'' or ''too little'' employee or foreign ownership, and to seek estimates of the transaction costs of ownership change. Finally, the methods of this study could be applied to examine the comparative effi-

ciency of developed country firms. For example, it would be of interest to examine different types of ownership of closely held firms. Among publicly listed firms, one could compare the performance of those with widely diffused shareholdings, with concentrated family or institutional holdings, and with substantial holdings by key managers or ESOPs, or other ownership characteristics. This research could shed light on the economic efficiency of takeovers.

REFERENCES

Aoki, Masahiko, *The Cooperative Game Theory of the Firm.* New York: Oxford Univ. Press, 1984.

Blasi, Joseph, ''Russian Enterprises after Privatization.'' Paper presented at an ACES panel on privatization at the ASSA annual meetings, San Francisco, Jan. 1996.

Blasi, Joseph, Conte, Michael, and Kruse, Douglas, ''Employee Stock Ownership and Corporate Performance Among Public Companies.'' *Indust. Labor Relations Rev.* **50,** 1:60–79, Oct. 1996.

Blasi, Joseph, and Kruse, Douglas, *The New Owners: The Mass Emergence of Employee Ownership in Public Companies and What it Means to American Business.* New York: Harper Collins, 1991.

Bonin, John P., Jones, Derek C., and Putterman, Louis, ''Theoretical and Empirical Studies of Producer Cooperatives: Will Ever the Twain Meet?'' *J. Econom. Lit.* **31,** 3:1290–1320, Sept. 1993.

Bornschier, Volker, ''Multinational Corporations and Economic Growth: A Cross-National Test of the Decapitalization Thesis.'' *J. Devel. Econom.* **7,** 2:191–210, June 1980.

Brudney, Victor, ''Corporate Governance, Agency Costs and the Rhetoric of Contract.'' *Columbia Law Rev.* **7,** 1403–1444, 1985.

Caves, Richard E., *Multinational Enterprise and Economic Analysis.* New York: Cambridge Univ. Press, 1982.

Conte, Michael, and Svejnar, Jan, ''The Performance Effects of Employee Ownership Plans.'' In Alan S. Blinder, Ed., *Paying for Productivity: A Look at the Evidence.* Washington: Brookings, 1990.

Estrin, Saul, Jones, Derek, and Svejnar, Jan, ''The Productivity Effects of Worker Participation: Producer Cooperatives in Western Economies.'' *J. Comp. Econom.* **11,** 1:40–61, March 1987.

Fitzroy, Felix R., and Kraft, Korenelius, ''Cooperation, Productivity, and Profit Sharing.'' *Quart. J. Econom.* **102,** 1:23–35, Feb. 1987.

Froot, Kenneth A., ''Foreign Direct Investment in Eastern Europe: Some Economic Considerations.'' In Olivier Blanchard, Kenneth A. Froot, and Jeffrey D. Sachs, *The Transition in Eastern Europe,* Vol. 2, pp. 293–318. Chicago: Univ. Chicago Press, 1994.

Haddad, Mona, and Harrison, Ann, ''Are there Positive Spillovers from Direct Foreign Investment: Evidence from Panel Data from Morocco.'' *J. Dev. Econom.* **42,** 1:51–74, Oct. 1993.

Hausman, Jerry A., ''Specification Tests in Econometrics.'' *Econometrica* **46,** 6:1251–1271, Nov. 1978.

Im, Sco J., Jalali, Robert, and Saghir, Jamal, *Privatization in Republics of the Former Soviet Union.* Washington, DC: World Bank, 1993.

Jenkins, Rhys, ''Comparing Foreign Subsidiaries and Local Firms in LDCs: Theoretical Issues and Empirical Evidence.'' *J. Devel. Stud.* **26,** 2:205–228, Jan. 1990.

Jensen, Michael C., and Ruback, Richard S., ''The Market for Corporate Control: The Scientific Evidence.'' *J. Finan. Econom.* **11,** 1–4:5–50, Apr. 1983.

Jones, Derek, and Svejnar, Jan, ''Participation, Profit Sharing, Worker Ownership and Efficiency in Italian Producer Cooperatives,'' *Economica* **52,** 28:449–465, Nov. 1985.

Lee, Barbara, ''Should Employee Participation Be Part of Privatization.'' Policy, Research, and External Affairs Working Paper WPS 664, Washington, DC: World Bank, May 1991.

Levy, Brian, ''The Determinants of Manufacturing Ownership in Less Developed Countries: A Comparative Analysis.'' *J. Devel. Econ.* **28,** 2:217–231, Mar. 1988.

Lipton, David, and Sachs, Jeffrey D., ''Privatization in Eastern Europe: The Case of Poland.'' *Brookings Papers Econom. Activity* **(0)**, 2:293–333, 1990.

Lucas, Robert E. B., ''On the Determinants of Direct Foreign Investment: Evidence from East and Southeast Asia.'' *World Devel.* **21,** 3:391–406, March 1993.

Maddala, G. S., *Limited Dependent and Qualitative Variables in Econometrics.* Cambridge, UK: Cambridge Univ. Press, 1983.

Maddala, G. S., *Introduction to Econometrics.* New York: Macmillan, 1988.

Meier, Gerald, *Leading Issues in Economic Development,* 6th ed. New York: Oxford Univ. Press, 1995.

Nuti, Mario, ''Employeeism: Corporate Governance and Employee Ownership in Transitional Economies.'' Presented at the Conference on Enterprise Restructuring and Labour Markets, Torino, 1995.

Porter, Michael, *The Competitive Advantage of Nations.* New York: Free Press, 1990.

Rojec, Matija, with Artisien, Patrick, Galli, Anton, and Svetlicic, Marjan, ''The Role of Inward Foreign Direct Investment in Transformation of Socialist into Market Economy: The Case of Slovenia.'' Ljubljana: Center for International Cooperation and Development, 1993.

Rondinelli, Dennis A., *Privatization and Economic Reform in Central Europe: The Changing Business Climate.* Westport, CT: Quorum, 1994.

Smith, Stephen C., ''On the Incidence of Profit and Equity Sharing: Theory and an Application to the High Tech Sector.'' *J. Econom. Behav. Organiz.* **9,** 1:45–58, Jan. 1988.

Smith, Stephen C., ''Innovation and Market Strategy in Italian Industrial Cooperatives: Econometric Evidence on Organizational Comparative Advantage.'' *J. Econom. Behav. Organiz.* **23,** 3:303–320, May 1994(a).

Smith, Stephen C., ''On the Law and Economics of Employee Ownership in Privatization in Developing and Transition Economies.'' *Ann. Public Cooperative Econom.* **65,** 3:437–468, 1994(b).

Svejnar, Jan, and Smith, Stephen C., ''The Economics of Joint Ventures in Centrally Planned and Labor-Managed Economies.'' *J. Comp. Econom.* **6,** 2:148–172, June 1982.

Svejnar, Jan, and Smith, Stephen C., ''The Economics of Joint Ventures in Less Developed Countries.'' *Quart. J. Econom.* **99,** 1:149–167, Feb. 1984.

Todaro, Michael P., *Economic Development,* 5th ed. New York: Longman, 1994.

Uvalic, Milica, *Investment and Property Rights in Yugoslavia: The Long Transition to a Market Economy.* Cambridge: Cambridge Univ. Press, 1992.

Welfens, Paul J. J., and Jasinski, Piotr, *Privatization and Foreign Direct Investment in Transforming Economies.* Brookfield, VT: Ashgate, 1994.