POLITICAL BEHAVIOR AS AN ECONOMIC EXTERNALITY:
ECONOMETRIC EVIDENCE ON THE RELATIONSHIP BETWEEN OWNERSHIP AND DECISION MAKING PARTICIPATION IN U.S. FIRMS AND PARTICIPATION IN COMMUNITY AFFAIRS

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ABSTRACT

The hypothesis that increased decision-making participation in the firm is mutually reinforcing with participation in the political process of the community is developed. Survey results from nearly 1400 employees of 55 U.S. firms with varying participation plans in profit, worker ownership and or democratic decision-making are used to test the hypothesis through a series of maximum likelihood logit regressions. A strong relationship between decision-making participation within the firm and participation in community political affairs is confirmed, controlling for all relevant demographic variables, with influences apparently running in both directions.

1. THE HYPOTHESIS: GENERAL TRAINING EFFECTS

The central hypothesis of the paper is that increased decision-making participation within the firm is mutually reinforcing with participation in the political process of the community.

First, practice at participatory decision-making, be that in works councils,

quality of work circles, or simply settings characterized by greater individual consultation, builds general skills in political efficacy. These skills, such as the knowledge of how to work with others to develop and implement an organizational agenda, may then also be effectively applied in the general political process in the community. Second, experience in community affairs provides a general training (or human capital) advantage over those without this experience when participatory structures are introduced into the firm. Experienced workers may in effect self-select into more participatory firms.

The testable implication of the hypothesis is that the level of observed participation in the firm will reflect the "supply" and the "demand" for participation. In particular, those with a higher degree of political experience are predicted to have a higher level of participation within the firm; while those with greater participation within the firm are predicted ceteris paribus to have a higher probability of having engaged in various political activities. These are the hypotheses tested for in the present paper. The regression analysis employed allows us to examine simultaneously other demographic variables which would be predicted to affect either the supply of participatory activities or their demand (marginal benefits).

2.   CLASSICAL THEORIES AND RECENT FINDINGS

The classical economists paid considerable attention to the influences of the workplace environment on employees; the effect on political behavior was just one of many "character development" implications that they considered. Though it is difficult, if not impossible, to separate their normative views from implied positive arguments about "general training" effects, a brief survey is in order before reviewing more modern work.

Adam Smith is seldom disappointing as a starting point for discussing the historical development of an idea in economics. To be sure, Smith worked from monarchist rather than democratic assumptions, and is well known for extolling the efficiency gains of hierarchical forms of the division of labor. Yet he was well aware of externalities, and spent considerable efforts in the *Wealth of Nations* arguing that the government should play the principal role in education, then a "market" of competing religious sectarian schools. It was in this context that Smith (1899, Vol. II, pp. 301–2) presented a startling analysis, foreshadowing some aspects of Marx's notion of "alienated labor:"

> In the progress of the division of labour, the employment . . . of the great body of the people, comes to be confined to a few very simple operations; frequently to one or two. But the understandings of the greater part of men are necessarily formed by their ordinary employments. The man whose life is spent performing a few simple operations . . . has no occasion to exert his understandings . . . He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as it is possible for a human creature to become . . . Of the great and extensive interests of his country he is altogether incapable of judging . . .

His contemporary Rousseau, of course, drew different economic and political conclusions from analogous observations.

J.S. Mill, one of the "classical" theorists of democracy as well as of political economy, also stressed "educative" externalities, for example in *Considerations on Representative Government*. On the negative side, despotic government stunted character development; on the positive side, experience with local participation would build skills suitable for national democracy. Mills made this argument one of the major pillars of his support of worker cooperatives in *Principles* (1909, Book IV; see esp. ch. VII). John Dewey (1938, 1939) developed his philosophy of the "educative" effects of differing forms of learning experiences around similar notions.

Contemporary advocates of an economic system based on cooperatives, or labor-managed firms, have addressed the issue, following generations of advocates before them. A "modern" formulation has been given by Jaroslav Vanek (1971, pg. 68), who has described increasing political and economic democracy as "mutually reinforcing" moments of an equilibrating process moving towards a "social general equilibrium." He stresses that peasants' experience with democratic cooperatives may serve as a "schooling and inspiration" for political democracy, and suggests a relationship between Czechoslovak experiences with industrial democracy in 1967–1968 and the political liberalization movement which immediately followed.

Most of the debate about participation within the workplace among mainstream economists, however, has focussed on questions of internal efficiency or inefficiency, rather than its "externalities." And while Marxist economists continue to develop concepts of "alienated labor," concern over its effects on participation in community affairs would seem a subsidiary (perhaps "superstructural") issue within much of that paradigm. In any case, the very scope of exegetical debates on the type of political system Marx "really" favored makes a brief summary impossible.

Modern economists have also interjected some very different views into what political scientists call "democratic theory." Schumpeter's (1947) writings have played a key role in the critique of democracy as a participatory form, as described by "classical" democratic theorists such as Rousseau or J.S. Mill. In addition to forming the intellectual basis of the "median voter" or "leader's competition for mandates" approaches to the analysis of voting in economics, after its appearance Schumpeter's approach became the dominant theory of democracy among Western political scientists.

However, "participatory" approaches to democratic theory have recently enjoyed a revival in the political science literature (a variety of arguments are advanced as to why an attempted separation of democracy as means or ends leads to contradictions). Some of these theorists have paid particular attention to the linkages between workplace participation and political democracy [see

especially Pateman (1970) and Mansbridge (1980)]. Since no empirical data on explicitly political behavior along with data on workplace experiences has been available, the empirical section in Pateman in effect used psychological data, such as job satisfaction, personal feelings of efficacy, democratic vs. authoritarian personality types, and so forth, as proxies to demonstrate political linkages. Mansbridge presents comparative case studies of the internal workings of a labor-managed firm and a participatory-democratic Vermont township.

Espinosa and Zimblast (1978, p. 182) found what might be described as a spillover from politics to the firm in their study of workers' participation in Chile during the Allende period:

> Our two explicitly political variables, (a) ideology and attitude toward participation of union and sectional leaders; and (b) the composition of political party support in each factory, were very significant and complementary explainers of the level of participation. That is, the more progressive the ideology of worker representatives . . . the greater was the level of participation observed.

Finally, Greenberg (1981b) asked workers at four labor-managed and one conventional plywood manufacturing firms five questions about civic involvement and used contingency tables to demonstrate a connection between labor management and civic involvement.

3. THE DATA SET

A sample of production workers, supervisors and managers from 55 U.S. firms, ranging in levels of employee participation from a conventional structure to full labor management, were asked as part of a wider study a series of questions about their political behavior.

Manufacturing firms with at least 25 employees were selected so as to ensure a broad cross-section of participatory forms, only a minority of which had introduced formal programs for nonmanagerial workers' participation in decision-making. The sample includes four labor-managed plywood manufacturing co-operatives, six firms purchased by employees in the face of an impending plant closing, two other firms with substantial direct employee ownership, and firms with management initiated decision-making participation, employee stock ownership and/or profit sharing plans, as well as a conventionally structured firm.

In 1980–81, 15 months from first to last firm included, nonmanagerial production workers were asked to fill out an attitudinal questionnaire and were paid $5 upon its return the following morning. A nearly 100% return was secured in this way. Workers said the whole survey took them about 45 minutes to complete.

Supervisors and managers were asked to fill out the questionnaire on their own time, and if necessary return it to us in a self-addressed stamped envelope

which we provided. About 35 production workers and up to 10 supervisors and 10 managers were surveyed at each firm, depending on firm size. Each group was selected by using a table of random numbers against a list of all employees in that category in the firm. While 1938 employees returned surveys, analysis has only been performed on those respondents answering all relevant questions; this varies according to the dependent variable, but is nearly 1400 in each case.

4. THE INSTRUMENTS

The political questions asked of the sample and analyzed here are as follows:

Please answer yes or no to each of the following questions:

a) Have you ever signed a petition used to support existing political policy or for political change? ____ Yes ____ No

b) Have you ever started a petition or sought out signatures for a petition for what you considered needed change? ____ Yes ____ No

c) Have you ever worked for a political candidate or political party? ____ Yes ____ No

d) Have you ever participated in a demonstration or rally whose purpose was to affect local or national political policy? ____ Yes ____ No

e) Are you now or have you been an active member of a group such as Young Democrats, Young Republicans, a neighborhood community group, etc.? ____ Yes ____ No

f) Have you ever run for any office such as high school president, city council, etc.? ____ Yes ____ No

g) Do you make it a point to keep abreast of political happenings by reading magazines and newspapers? ____ Yes ____ No

h) Have you ever worn a political button? ____ Yes ____ No

i) Have you ever displayed a bumper sticker for either a political candidate or a political issue? ____ Yes ____ No

j) Have you ever represented a group whose purpose was social change? ____ Yes ____ No

This index of 10 yes or no questions was adopted with minimal changes reflecting the times and the sample from a study of college students undertaken in the early 1970s (Rosen and Salling, 1971).[1] Though they have a slightly different emphasis than the five community involvement questions asked by Greenberg (1981b, p. 974), they are similar in form and overlap significantly in content.

An index of *individual* participation within the firm was constructed by taking the average of responses to a series of questions about frequency of discussions over work issues with personnel relevant to the company ranging from fellow

workers through the board of directors. This series of questions covered how work should be done, company financial policies, hiring, firing and layoff of production workers, and the selection and activities of supervisors and management. (The qualitative nature of the results, reported below, was found fairly insensitive to alternative formulations of this index, so a straightforward average was employed.)

The questionnaire covered a broad range of issues and collected demographic data, which is also used in the present study as explained below.

In Greenberg (1981b) as well as in Smith (1983, Chapter IX), the approach taken in analyzing spillover effects is to group the firms by levels of participation (two in the case of Greenberg, five in the case of Smith), and then use contingency table statistics to test for group differences. Strong participation effects were found in both studies, with some controls for demographic variables, as measured by such statistics commonly used in sociology as the ''gamma'' test of ''intrinsic and relevant order.'' In particular the present author found that the labor-managed firms and those worker-owned firms which also had a substantial level of participation had the highest percentage of political experience, using the same data set as in the present study.

Given the obvious limitations of contingency table analysis from the standpoint of economic analysis, for the present study multivariate logit equations have been estimated using a maximum likelihood procedure over the individual observations. Ten equations are estimated for the ten questions presented above, with the dependent variable a, 1 in the case of a ''yes'' answer, 0 in the case of a ''no.'' The estimated coefficients in Table 1 do not of themselves offer a direct interpretation. Thus, for the continuous variables, derivatives of the likelihood function were used to calculate elasticities, *epsilon* in the table, at the mean values of the independent variables.[2]

Question d (''DEMSTRTD'') and question i (''DBUMPSTK''), were, interestingly, linearly dependent; each person who responded ''yes'' on one question also did so on the other, and the same with ''no'' answers.

5.   RESULTS

Results from these regressions are reported in Table 1.

Taken together, the results do generally conform to a human capital theory of political involvement.

The firm level dummy variables for direct or indirect employee ownership (WORKOWN), profit sharing (PROFSHR) and the presence of formal plans for decision-making participation (PARTIC) control for the effect of general firm environment on the probability of engagement in the 10 activities. These dummy variables were generally insignificant within the sample (all but one firm had at least one such plan), although PARTIC, the variable of theoretical importance, is positive and significant in questions a and b; and PROFSHR, the least par-

Table 1.

DEP. VAR. IND. VAR.	SIGNPETN N = 1383 Yes = 658 No = 725 Missing = 555	STARTPET N = 1384 Yes = 266 No = 1118 Missing = 554	WRKPRTCD N = 1378 Yes = 212 No = 1166 Missing = 560	DEMSTRTD N = 1380 Yes = 384 No = 996 Missing = 558	ACTMMGRP N = 1383 Yes = 166 No = 1217 Missing = 555
INTERCEPT	−13.7765** (1.4819)	−7.1060** (1.6601)	−19.0134** (2.0537)	−7.1034** (1.4389)	−14.3842** (2.1358)
WORK-OWN	.1940 (.1496)	−.1517 (.1764)	.0787 (.2081)	.0040 (.1560)	−.2893 (.2267)
PROF-SHR	−.0855 (.1423)	.0082 (.1682)	−.1543 (.1934)	−.2134 (.1476)	−.3557† (.2143)
PARTIC	.3934** (.1442)	.2877† (.1652)	.0342 (.1979)	.1936 (.1482)	.2111 (.2107)
FEMALE	−.4790** (.1479)	.1575 (.1804)	.2151 (.2147)	.0464 (.1559)	.5154* (.2243)
WRKCLASS	.0906 (.1503)	−.1247 (.1790)	−.0497 (.1998)	−.2132 (.1590)	.4111† (.2152)
SMSA	−.2337 (.1694)	.1255 (.1968)	−.0981 (.2295)	−.4108* (.1760)	.0044 (.2514)
LOG(INC)	.1620 (.1074) ε = .8436	.0073 (.1267) ε = .0590	.2999† (.1604) ε = 2.5995	.0388 (.1116) ε = .3191	.0835 (.1661) ε = .7430
LOG(EDUC)	2.7237** (.3864) ε = 3.6104	1.7946** (.4673) ε = 3.6924	3.4892** (.5728) ε = 7.6983	.6446† (.3599) ε = 1.3489	3.1305** (.6116) ε = 7.0903
LOG(TENURE)	−.0045 (.0617) ε = −.0098	.0684 (.0752) ε = .2314	−.0267 (.0818) ε = .0969	.0411 (.0644) ε = .1415	−.0785 (.0868) ε = −.2923
LOG(POP)	.0588† (.0350) ε = .3198	−.0448 (.0419) ε = −.3783	.0398 (.0454) ε = .3603	.0235 (.0369) ε = .2017	.0253 (.0496) ε = .2351
LOG(AGE)	1.1172** (.2263) ε = 2.1429	.1136 (.2675) ε = .3382	1.2028** (.3116) ε = 3.8414	.9549** (.2384) ε = 2.8930	.8488* (.3342) ε = 2.7822
LOG(INDEX)	1.0846** (.2021) ε = .3695	1.1119** (.2388) ε = .5879	1.1080** (.2736) ε = .6286	.9736** (.2091) ε = .5238	.7910** (.2958) ε = .4605

Table 1 (continued)

DEP. VAR. IND. VAR.	RUNOFFIC N = 1383 Yes = 328 No = 1056 Missing = 554	STAYINFM N = 1383 Yes = 981 No = 400 Missing = 557	WRNBUTTN N = 1383 Yes = 296 No = 887 Missing = 555	DBUMPSTK N = 1380 Yes = 384 No = 996 Missing = 558	REPSCGRP N = 1355 Yes = 121 No = 1234 Missing = 583
INTERCEPT	−15.1081** (1.7994)	−14.4644** (1.5958)	−10.9686** (1.4137)	−7.1034** (1.4389)	−11.4968** (2.3853)
WORK-OWN	−.0612 (.1754)	.1622 (.1599)	.1299 (.1494)	.0040 (.1560)	.1120 (.2586)
PROF-SHR	−.3055† (.1657)	−.2105 (.1554)	−.3448* (.1406)	−.2134 (.1476)	−.3113 (.2369)
PARTIC	.0538 (.1666)	−.0091 (.1586)	−.1454 (.1447)	.1936 (.1482)	−.3584 (.2594)
FEMALE	.4359* (.1779)	−.2769† (.1521)	.0781 (.1467)	.0464 (.1559)	.4307† (.2464)
WRKCLASS	.0797 (.1744)	.3007† (.1775)	−.3260* (.1514)	−.2132 (.1590)	−.3984 (.2602)
SMSA	−.4910* (.1950)	.1764 (.1850)	−.2894† (.1675)	−.4108* (.1760)	−.3410 (.2883)
LOG(INC)	.5489** (.1375) ε = 4.3742	.0608 (.1083) ε = .1811	.0740 (.1605) ε = .4746	.0388 (.1116) ε = .3191	−.0901 (.1706) ε = −.8233
LOG(EDUC)	3.8969** (.5254) ε = 7.9047	2.4993** (.3937) ε = 1.8953	1.7663** (.3671) ε = 2.8840	.6446† (.3599) ε = 1.3489	3.5148** (.7314) ε = 8.1843
LOG(TENURE)	−.0757 (.0715) ε = −.2524	−.0061 (.0682) ε = .0076	.0731 (.0607) ε = .1962	.0411 (.0644) ε = .1415	−.0260 (.1017) ε = −.0994
LOG(POP)	.0265 (.0411) ε = .2206	−.0119 (.0393) ε = −.0370	.0655† (.0343) ε = .4385	.0235 (.0369) ε = .2017	.0482 (.0578) ε = .4612
LOG(AGE)	−.4754 (.2611) ε = 1.3956	2.2711** (.2569) ε = 2.4920	1.1672** (.2251) ε = 2.7584	.9549** (.2384) ε = 2.8930	.0312 (.3678) ε = .1051
LOG(INDEX)	1.0031** (.2407) ε = .5227	.7596** (.2228) ε = .1482	.6029** (.1982) ε = .2534	.9736** (.2091) ε = .5238	1.4098** (.3276) ε = .8398

Notes: Figures in parentheses are standard errors.
** and * and † refer to significance at the .01, .05 and .10 levels, respectively.

ticipatory form considered, is negative in all but one case and negative for the three questions in which it is significant.

Of course, it is individual participation in which we are most interested, and effects of general firm environment are of real but secondary importance. But previous contingency table work suggested that firms with both worker ownership and participation were most likely to show a high percentage of political experience. As a check, a second set of equations was estimated in which the three firm dummies were replaced with a single qualitative variable for the simultaneous presence of both (again direct or indirect) worker ownership and decision-making participation. While other coefficients were scarcely affected, these new dummies were significant (and positive) for five of the ten questions.

The qualitative variable, FEMALE, taking the value 1 if the respondent is female and 0 if male, enables us to capture whether women may have a higher or lower probability of participation in certain activities, holding other firm and demographic variables constant. (The problem is that since firms differed in percentages of male and female employees, omission of this variable could bias other coefficients.)

In two equations, SIGNPETN (question a) and STAYINFM (question g), the coefficient is negative and significant. There seems to be no intuitively obvious explanation for this result, though it may be noted that these questions generated by far the largest percentage of yes responses, as seen on the table. Indeed, "human capital" theory would predict (in the absense of political discrimination) that women would have a higher than average probability of engagement in time-intensive political activities. The reason would be that women, who, other demographic factors constant, face lower wages, have a lower opportunity cost of involvement. As it turns out, the three cases in which this coefficient is positively significant, questions e (ACTMMGRP), f (RUNOFFIC), and j (REPSCGRP), are among the most time-consuming political activities.

The dummy variable WRKCLASS, taking the value 1 if the respondent is a manager or supervisor and 0 otherwise, has no predicted sign because theory would imply two effects. If a supervisory role builds general human capital for political efficacy, a positive sign, for a higher probability of "yes" responses, would be predicted. However, supervisors and managers may have a higher opportunity cost for their time. Two coefficients are positive and significant, for questions e (ACTMMGRP) and g (STAYINFM), but one, for question c (WRNBUTTN), is negative. The most obvious explanation for the latter finding is a difference in political culture.

The final qualitative variable, SMSA, takes the value 1 if the respondent works in a standard metropolitan statistical area, and 0 otherwise. It is intended to control for two possible problems. On the one hand, the political process tends to be more indirect in large population centers, and thus the "supply" of opportunities for participatory involvement may be more limited. Just as important, political authority in an SMSA is often fractured between townships, for example

between places of work and places of residence for many people, so that *incentives* ("demand") for involvement are reduced. In fact, the estimated coefficients are significant in four cases, all negative.

Turning to the continuous variables, LOG(POP), the log of the town or city population in which the firm was located, was intended to help accomplish much the same purpose as SMSA. But the only significant coefficients are positive, for two questions, a (SIGNPETN) and h (WRNBUTTN). In retrospect, this is not such a strange finding, since these latter two activities are indirect if not "anonymous" forms of political communication.

No prediction was possible on the sign of the probability elasticity with respect to income. Since the higher the income, the higher the opportunity cost of time, the predicted sign on the log of income, LOG(INC), might have been negative. On the other hand, it is argued that the affluent tend to have greater potential gain from involvement—not to mention more at stake—in most communities. In fact the coefficient was significant, positively so, in only two cases, for questions c (WRKPRTCD) and f (RUNOFFIC). In fact each of these are traditional political activities of the more affluent middle classes. For many of the other activities, it may be reasonable to believe that, holding other demographic factors constant, these positive and negative influences are self-cancelling.

The log of the level of schooling, LOG(EDUC), was predicted to be positive due to "general training." Since general education may provide human capital in political efficacy, acquired outside of the workplace, and since average education levels differed among firms in the sample, this was a necessary control. In fact, the variable proved positive and significant in each case, with elasticities generally well over 1.

Although many of the firms in the sample introduced the plans within a few years of the survey, and worker-purchased firms converted to employee ownership with high average workforce ages, the log of the number of months worked at the plant, LOG(TENURE), was included with a predicted positive sign. In fact, the coefficients were insignificantly different from zero for all questions. Perhaps this represents anecdotal evidence, in addition to that presented below, that part of the causality is given by self-selection of those with political experience into participatory firms.

The coefficient on the log of the respondents' age, LOG(AGE), is positive and highly significant in the regressions for seven of the questions. Since most questions, following Rosen and Salling (1971), were asked on a "have you ever" basis, it was of obvious importance to control for age, whether this reflects greater political efficacy or simply accumulated opportunities for involvement.

The most important variable in the regressions from the point of view of the theory at hand is the index of individual levels of decision-making participation within the firm, given by LOG(INDEX). The coefficient on this variable was highly significant (positively so) in the regressions for each of the ten questions. The index used, the average response among questions answered on frequency

of discussions on five key firm decision-making areas, as described above, was the most straightforwardly constructed index from the data. For sensitivity purposes, alternative weightings were tried, and the model was reestimated with little effect on the significance of any coefficients. Thus, the information from the responses to these questions provides a robust predictor of the probability of having engaged in the various political activities. The elasticities, interpreted as the percent change in the probability of engagement per percent change in the index score, were thus all positive.

Spillover could take place as well in the direction of general participation capital being acquired in the political sphere and then reapplied in the participation framework of the firm. Thus the log of the same participation index was regressed on firm and demographic variables which there was reason to believe might influence participation within the firm; in addition, dummy variables for participating in the ten activities considered above were included as well. (Only nine of these could be entered directly because responses to two of the ten questions' variables were linearly dependent.) The results of this regression may be seen in Table 2.

As can be seen from the sample, most coefficients proved statistically significant, all with predicted sign. The existence of participation plans as reported by the firm, especially decision-making participation, PARTIC, should increase

Table 2.

Variable	Parameter	Standard error
N = 1332		
intercept	.3956	.1777*
partic	.0426	.0193*
workerown	.0422	.0195*
profshr	.0375	.0189*
manager/supervisor	.1222	.0199**
female	−.0884	.0195**
log (income)	.0600	.0137**
log (education)	.0476	.0441
log (tenure)	.0271	.0081**
log (age)	−.2044	.0308**
Qa (SIGNPETN)	.0556	.0183**
Qb (STARTPET)	.0518	.0218*
Qc (WRKPRTCD)	.0381	.0262
Qd (DEMSTRTD)	.0502	.0277*
Qe (ACTMMGRP)	−.0184	.0280
Qf (RUNOFFIC)	.0443	.0209*
Qg (STAYINFM)	.0404	.0192*
Qh (WRNBUTTN)	−.0126	.0199
Qi (DBUMPSTK, collinear with demonstrated, dropped)*		
Qj (REPSCGRP)	.0489	.0304

Note: ** and * refer to significance at the .01 and .05 significance levels, respectively.

the level of discussion of firm issues, and coefficients on the first three variables confirm this. Naturally, supervisors and managers score higher on the index than do production workers, even in a participatory setting. The qualitative variable FEMALE, again defined as before, is negative and highly significant. This may very well represent the effect of sex discrimination.

Among continuous variables, coefficients on income and tenure at the firm were positive and significant, as predicted. The coefficient on age is negative and significant. Given that tenure is controlled for, age may be picking up negative educative effects from previous employment. The coefficient on education level was positive but not significant statistically.

Among the dummy variables for engagement in the ten political activities (only nine of which can be entered directly since two are linearly dependent in the survey responses), five have statistically significant coefficients, all positive as predicted by the theory. (Note that since question d, DEMSTRTD, is once again linearly dependent with question i, DBUMPSTK, that is to say, the same people answered yes and no to each of these two questions, in effect six of the activities have been found associated with participation within the firm. This is noted on Table 2.) Since the null hypothesis that these political variables do not add to explanatory power is rejected, a link is demonstrated from activities in community affairs to participation in the firm as well.

6.   OVERALL CONCLUSIONS

The claim that workers do not want to be "bothered" with problems faced by higher management is one of the major arguments cited by opponents of workplace participation. It is also suggested that nonmanagerial employees lack the experience needed for informed decision-making. But theorists of political democracy have been making the claim for two centuries that one must be "educated" for participation at the most local level before one can meaningfully participate at higher levels. Pateman (1970, p. 107) argues that this is of particular relevance within the firm. Thus, even limited movements toward participation at the smallest divisional level may ultimately lead to large behavioral and perhaps attitudinal changes, though crucial issues such as the role of unions require painstaking negotiation.

Some evidence is available that participation raises productivity. If participation also generates externalities, firms would "underinvest" in participation assuming increased participatory democracy is a social welfare goal. (From the point of view of an authoritarian regime, firms with employee participation would be *overinvesting* in participation, as possibly revealed by the Czech experience or the military coup against Allende.)

But the major point to be made is that this seemingly most normative subject of classical political economy has definite positive content as well; the present paper has been intended as a step toward empirical testing. Within the limitations

of the data set, which are real, this study has provided strong confirmation of a "general human capital" spillover theory of the relationship between participatory structures in the firm and civic participation in the community. We have found that workers with participatory experience in the firm are more likely to have participated in community politics, and vice versa, even controlling for all relevant demographic variables.

NOTES

1.   Since we had no idea *when* workers engaged in any of these activities, the high school president example was left intact as an illustration of how broadly we conceived of "office."

2.   The derivatives of the likelihood function are (Maddala, 1983):

$$\frac{\partial P_r}{\partial X_K} = \frac{e^{X'\beta}}{(1 + e^{X'\beta})^2}$$

so that the elasticities for continuous variables k are:

$$\epsilon = \frac{\beta_k \bar{X}_k}{1 + e^{\beta'X}}$$

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PRICE ADJUSTMENT IN THE LABOR-MANAGED ECONOMY:

THEORY AND SOME YUGOSLAV EVIDENCE

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1. INTRODUCTION

In the middle 1960s, discussions began in the Yugoslav economics literature concerning the functioning of the so-called law of value and the role of the market mechanism under the conditions of a labor-managed economy. This was closely related to the question of rational economic behavior in labor-managed firms, where workers were entitled to set prices on their products and received labor income as a share of value-added (after payment of the user cost of capital). A slightly different version of the well-known paper by Kyn, Hejl and Sekerka (1966) fell in the center of these discussions (cf. 1966). They proposed a model for the planning of prices, with the mathematical and economic apparatus based on economic models of the Leontief type, which can be used to estimate various rational price formulas. Despite the fact that it was intended to serve as a model for price reform in Eastern Europe, it provoked another kind of empirical research in Yugoslavia, and we observe a steadily growing literature in this domain: Pjanic (1971), Frankovic (1978, 1981), Petrovic (1978, 1979, 1983), Sekulic (1980). At the same time, some attempts have been made to apply the theoretical