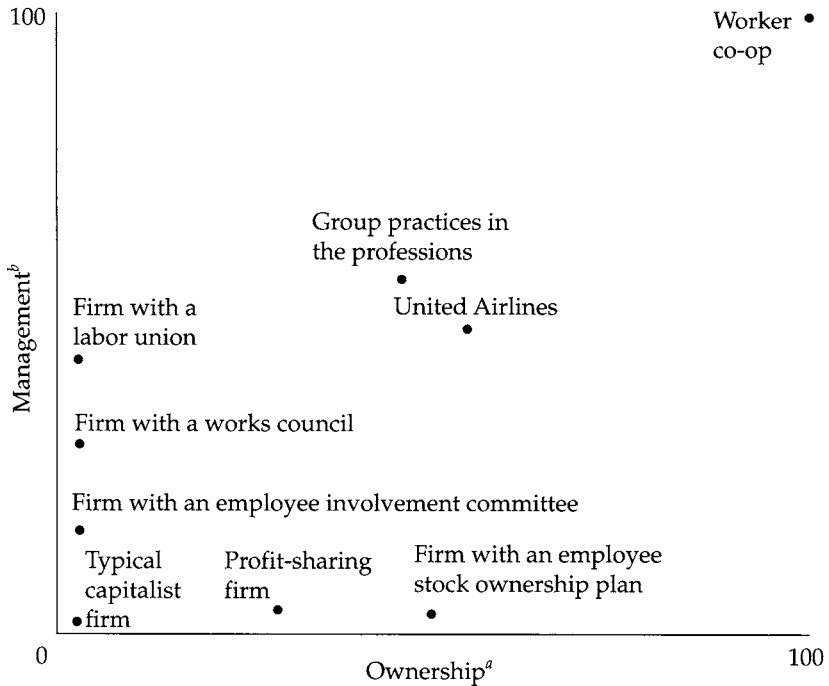


**Figure 1.1** / Organizing Framework of Firms, by Extent of Worker Involvement

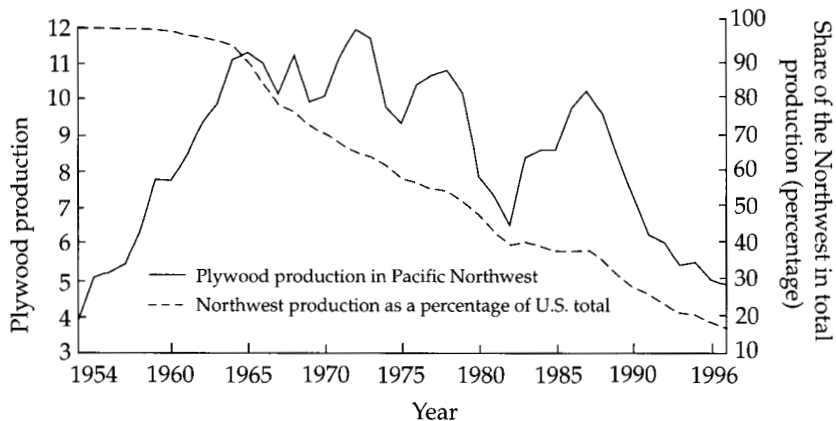


Source: Author's configuration.

<sup>a</sup>Percentage of firm's total net earnings allocated to workers.

<sup>b</sup>Percentage of firm's total management activities performed by workers.

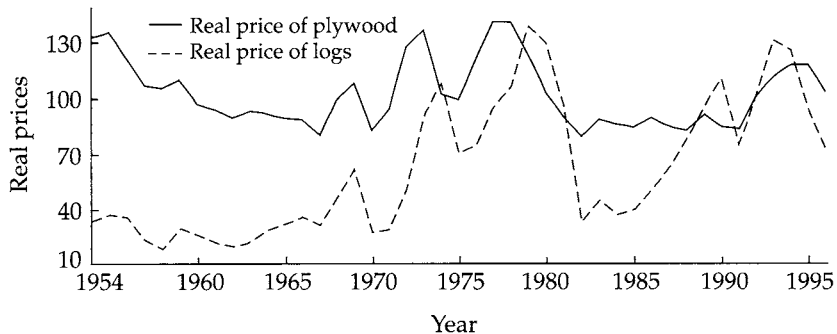
**Figure 2.1** / Plywood Production in the Pacific Northwest, from 1954 to 1996



Source: U.S. Department of Agriculture (various issues).

Note: Plywood production in the Pacific Northwest (the left-hand axis) is measured in thousand million square feet, 3/8-inch basis. Before 1983, the data related to plywood only. From 1983, they refer to plywood, waferboard, and oriented strand board. The right-hand axis measures plywood production in the Pacific Northwest as a percentage of total U.S. production.

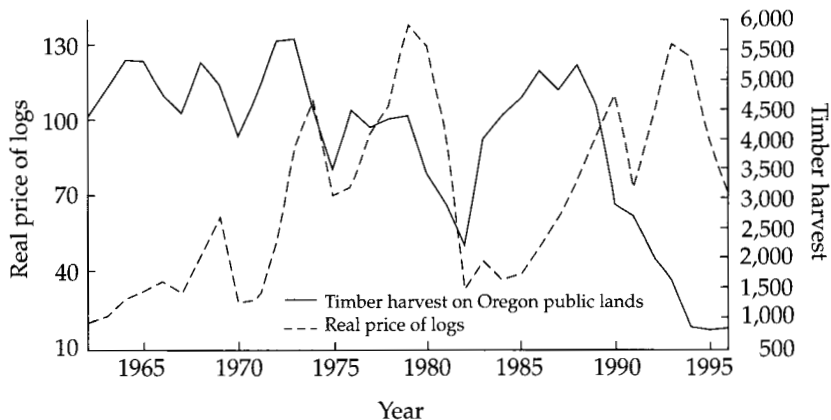
**Figure 2.2** / Index of Real Prices of Plywood and Logs, from 1954 to 1996 (1992 = 100)



Source: U.S. Department of Agriculture (various years).

Note: The real price of plywood is the price per thousand square feet of sheathing, western exterior, 3/8-inch, CD, net f.o.b. mill divided by the total finished-goods producer price index (*Economic Report of the President 1999*, table B-65). The real price of logs is the average stumpage price for all species of sawtimber sold on National Forests in the Pacific Northwest region in dollars per thousand board feet also divided by the total finished goods producer price index.

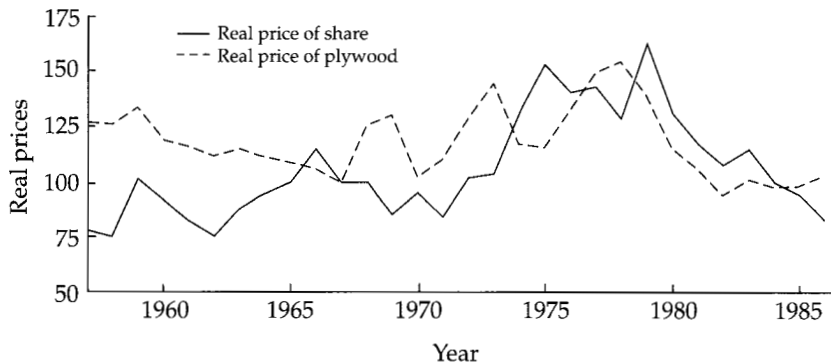
**Figure 2.3 / Index of Real Price of Logs and Public Timber Harvest in Oregon, from 1962 to 1996 (1992 = 100)**



*Sources:* Oregon Department of Forestry; U.S. Department of Agriculture (various issues.)

*Note:* Timber harvest on Oregon public lands is the timber harvested on land in Oregon owned by the state, the Bureau of Land Management, the U.S. Forest Service, and Oregon county and municipal agencies, measured in million board feet (Scribner log scale). The real price of logs is the average stumpage price for all species of sawtimber sold on National Forest lands in the Pacific Northwest region in dollars per thousand board feet divided by the total finished-goods producer price index.

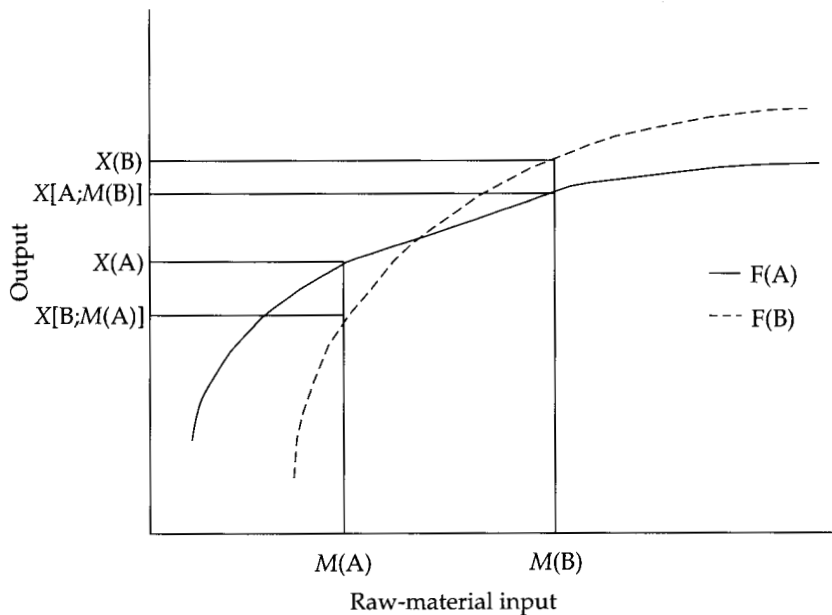
**Figure 2.4** / Index of the Price of Co-Op Membership Shares and of the Price of Plywood Output, 1957 to 1986 (1967 = 100)



Sources: Data from Oregon Department of Forestry; U.S. Department of Agriculture (various issues).

Note: The real price of plywood is the price per thousand square feet of sheathing, western exterior, 3/8-inch, net f.o.b. mill divided by the total finished goods producer price index (*Economic Report of the President 1999*, table B-65). The real price of shares is described in note 13.

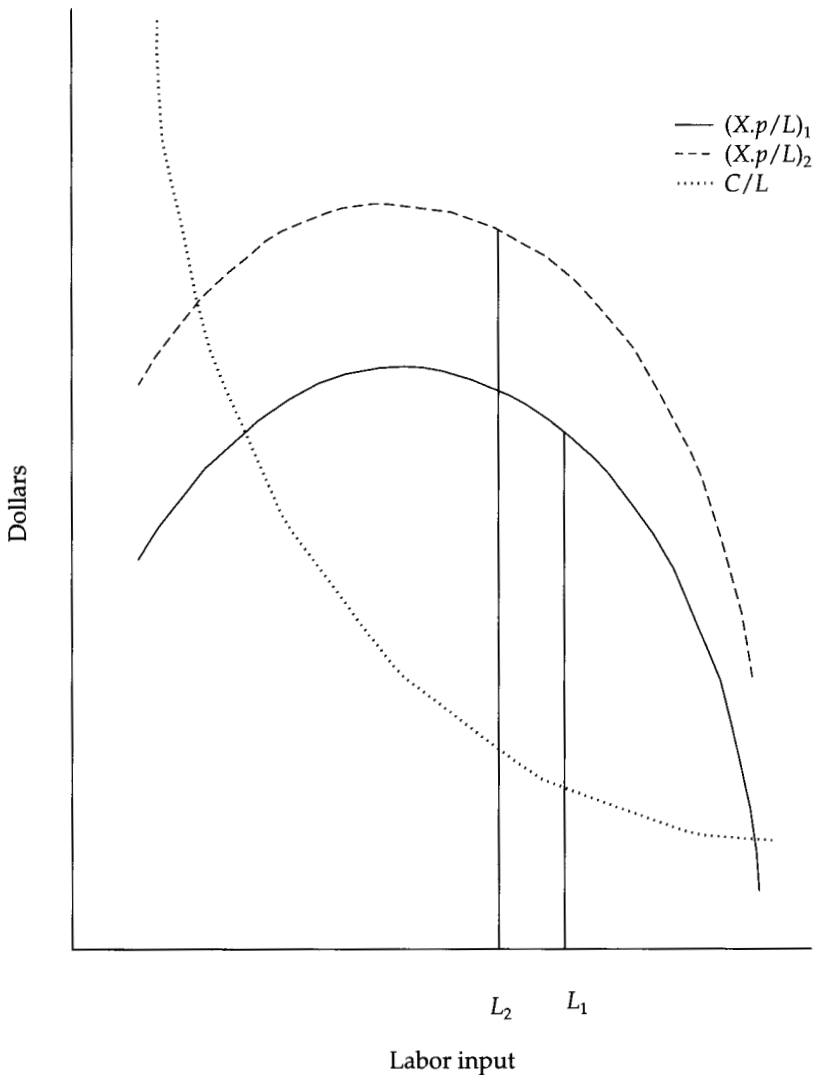
**Figure 3.1** / Output as a Function of Raw-Material Input



Source: Author's configuration.

Note:  $F(A)$  and  $F(B)$  are the production functions for firms A and B, respectively.  $X$  represents output, and  $M$  raw-material input.

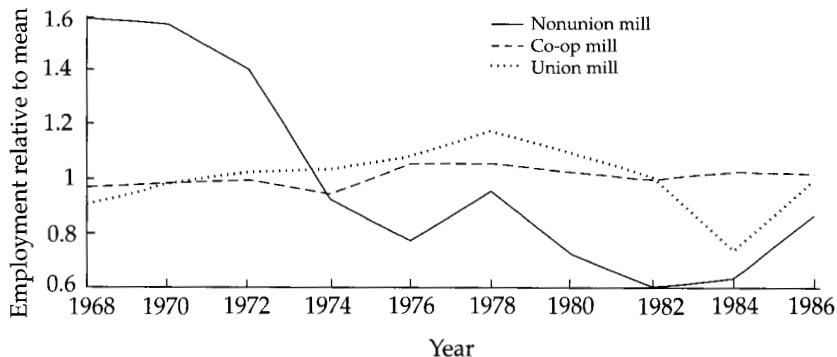
**Figure 3.2** / Income Maximization Hypothesis, with Labor as the Only Variable Input



Source: Author's configuration.

Note:  $C$  represents cost of all fixed inputs;  $L$  represents the number of workers.  $X$  represents output, and  $p$  the price of each unit of output.

**Figure 3.3 /** Relative Employment in Three Plywood Mills, from 1968 to 1986



*Source:* Data from author's survey.

*Note:* Each line represents employment in a given mill relative to average employment in that mill. The three mills are of different sizes: the nonunion mill's average employment is 114.1 workers; the union mill's average employment is 577.3 workers; and the co-op mill's average employment is 241.3 workers.



**Table 3.1** / Proportionate Differences in Productivity and Output Between Co-ops, Classical Mills, and Unionized Mills

Variable	Proportionate Difference Between . . .		
	Co-ops and Classical Mills	Unionized and Classical Mills	Co-ops and Unionized Mills
Output per worker hour	-0.360	-0.390	0.050
Output per raw- material input	0.360	0.190	0.190
Simulated output evaluated at co-op mills' inputs <sup>a</sup>	0.063	-0.050	0.119
Simulated output evaluated at unionized mills' inputs <sup>a</sup>	0.116	-0.030	0.150
Simulated output evaluated at classical mills' inputs <sup>a</sup>	0.573	0.040	0.513

Source: Author's compilation.

<sup>a</sup>The output differences are derived from instrumental variable estimates of log-linear production functions, in which the parameters of the functions are allowed to differ among the three types of firms.

**Table 3.2 / The Effects of Changes in Plywood Prices and in Log Prices, by Type of Firm**

Dependent Variable	Worker Cooperatives		Capitalist Firms	
	Plywood Prices	Log Prices	Plywood Prices	Log Prices
Real hourly wages	0.978 (0.160)	-0.225 (0.192)	0.153 (0.151)	-0.044 (0.118)
Employment	-0.005 (0.084)	-0.065 (0.083)	0.657 (0.133)	-0.200 (0.126)
Hours per worker	0.101 (0.133)	-0.095 (0.141)	0.443 (0.141)	-0.140 (0.083)
Worker hours	0.096 (0.131)	-0.160 (0.171)	1.100 (0.205)	-0.340 (0.151)
Annual real earnings per worker	1.079 (0.145)	-0.320 (0.175)	0.596 (0.187)	-0.184 (0.145)
Logs	1.015 (0.396)	-0.982 (0.373)	0.910 (0.327)	-0.407 (0.296)
Output	0.196 (0.225)	-0.473 (0.215)	0.856 (0.274)	-0.423 (0.219)

Source: Author's compilation.

Note: The numbers under the column heading "Plywood Prices" are least-squares estimates of  $\alpha$ , and the numbers under the column heading "Log Prices" are least-squares estimates of  $\beta$  (with robust standard errors in parentheses) from the stochastic equation  $\log(y_{it}) = \delta_i + \alpha \log(p_{it}) + \beta \log(r_{it}) + \varepsilon_{it}$ , where  $p$  denotes real plywood prices,  $r$  real log prices,  $\delta_i$  is a fixed effect for mill  $i$ , and  $y_{it}$  represents in turn real hourly wages, employment, annual hours per worker, worker hours, annual real earnings per worker, logs, and output.  $\varepsilon$  is a stochastic disturbance. The equations are fitted separately for worker cooperatives and for the capitalist firms.

**Table 3.3 / The Employment of Shareholders as a Share of Total Employment, by Co-op Firm and Year (Percentage)**

Firm	1958	1963	1967	1972	1976	1977	1982
A	62.9	64.7	66.2	68.8	71.1	65.6	70.5
B	—	—	—	—	—	—	94.3
C	73.5	82.8	69.7	52.9	—	54.0	—
D	63.6	57.5	60.5	—	—	—	—
E	67.0	—	—	—	—	—	—
F	—	93.4	97.3	89.8	91.2	96.8	96.8
G	—	82.3	66.9	68.1	60.8	61.6	76.9
H	—	74.6	79.0	66.2	—	60.8	37.5
I	88.6	85.0	81.3	94.4	76.6	76.0	85.8
J	100.0	97.3	78.0	76.4	81.7	71.2	53.3
K	100.0	83.1	77.5	74.5	80.0	76.6	—
L	100.0	95.9	93.6	87.6	90.6	89.6	83.7
M	54.7	43.2	49.2	52.6	51.3	45.1	75.2
N	77.3	78.0	76.2	81.9	58.6	59.8	69.6

*Source:* Author's compilation.

*Note:* An empty cell indicates that data could not be obtained.