SPECIAL REPORT

The Secret of Japanese Management Resulting in High Productivity

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This is the first of two parts. Part two will appear in the next issue.

JAPANESE PRODUCTIVITY TODAY

Japanese industry's high productivity is now a topic of worldwide interest. Not too many years ago, there was still a strong belief, especially in the United States and Europe, that the strong international market competitiveness of Japanese products was sustained by low-wage labor. Today, however, the Japanese standard of living is virtually equivalent to Western levels, and it is clear for all to see that this wage argument has lost whatever persuasiveness it may once have had. As a result, people in the West have begun to look to the high labor productivity, and the efficient corporate management which sustains it, as the root causes of Japanese products' international competitive strength.

What are the facts? If we compare manufacturing labor productivity in various nations, taking 1960 as the base of 100, 1978 manufacturing productivity indices were 181.0 for the United States, 175.0 for the United Kingdom, 160.6 for West Germany, and 413.0 for Japan (see Table 1). Japan's productivity has increased far faster than that in the West.

This rapid productivity growth is also true on an industry-by-industry basis. Blast furnace pig iron production, for example, took 0.35 hours/ton in 1965 but only 0.12 hours/ton in 1978. In compact car production too, the time required to produce one vehicle was sharply reduced from 60.8 hours in 1965 to 20.4 hours in 1978 (see Table 2).

As a result, it is estimated that Japanese productivity has already surpassed U.S. levels in such industries as automobiles, household appliances and other machinery, and steelmaking. Of course, it is most difficult to compare national productivity figures authoritatively, not only because of the lack of comparable data but also because of the inherent technical problems involved in calculating productivity from available data. Nevertheless, these

Table 1. Manufacturing Labor Productivity Indexes

	France	W. Germany	Italy	Japan	U.K.	U.S.
1960	100.0	100.0	100.0	100.0	100.0	100.0
1965	126.1	132.5	151.2	140.7	118.3	122.9
1970	178.3	173.6	188.4	258.0	141.7	141.0
1975	217.4	222.0	232.6	333.0	166.7	164.2
1978	263.0	260.6	176.7	413.0	175.0	181.0
1979	—	—		445.0	—	185.3

Note: Productivity here has been calculated on the basis of unit hours.
Sources: MITI statistics, *Monthly Labor Statistics* (Japan), *Statistisches Jahrbuch*, DIW data, *Business Statistics, NIESR.*

Table 2. Productivity Increases

A. Steel: Direct labor time required per ton of product*

	1965	1970	1975	1978	$\frac{1978}{1965}$ %
Blast furnace pig iron	0.35	0.16	0.13	0.12	34
Conversion furnace steel	0.48	0.34	0.38	0.35	73
Electric furnace steel	3.41	2.19	1.67	1.02	30

B. Automobiles: Direct labor time required per vehicle*

	1965	1970	1975	1978	$\frac{1978}{1965}$ %
Compact passenger car	60.8	37.1	25.9	20.4	34
Small truck	59.4	35.4	25.6	21.1	36
Standard-size gasoline-engine truck	65.6	60.3	28.6	25.5	39
Standard-size diesel-engine truck	73.5	65.2	35.9	29.8	41

C. Spinning: Labor time required per 20-count bale

	1965	1970	1975	1978	$\frac{1978}{1965}$ %
Direct labor time	25.9	19.3	16.5	12.7	49
Indirect labor time	0.9	0.8	0.6	0.5	56
Total	26.8	20.1	17.1	13.2	49

D. Cement: Labor time required per ton

	1965	1970	1975	1978	$\frac{1978}{1965}$ %
Direct labor time	0.40	0.23	0.18	0.11	28
Indirect labor time	0.63	0.28	0.20	0.13	21
Total	1.03	0.51	0.38	0.25	24

* Direct labor time is the labor time required directly for production. In the steel industry, for example, this is the labor time for pig iron production, steel production, and rolling; and the time for such intermediate or support processes maintenance and repairs, and power have been classed as indirect labor time.

Source: *Statistical Survey of Labor Productivity*, Ministry of Labor.

Table 3. Comparison of U.S. and Japanese Value-added Labor Productivity by Industry

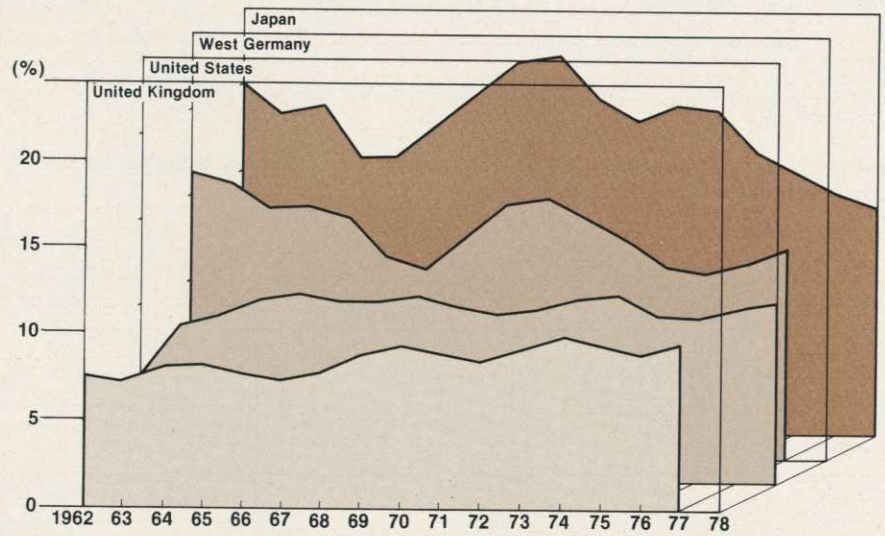
(U.S. figures for each year = 100)

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1979
All manufacturing (excluding tobacco and weapons)	39	43	51	57	57	60	69	71	73	73	83
Steel	62	63	74	88	86	97	130	144	165	185	208
Non-ferrous metals	42	43	61	78	54	56	66	76	44	63	82
Metal products	36	37	44	52	52	60	67	62	69	75	86
General machinery	42	46	55	60	66	61	63	65	77	82	111
Electrical machinery	44	50	56	64	65	70	82	89	91	99	119
Transport machinery	42	47	55	67	64	71	85	84	95	110	124
Automobiles (includes two-wheel vehicles)	38	40	48	63	55	61	72	83	82	86	100
Transport machinery excluding automobiles	35	38	49	54	61	73	91	86	95	121	—
Precision machinery	26	28	34	38	38	41	55	75	74	73	134

Notes: 1. Figures above are Japanese value-added labor productivity figures calculated using the corresponding U.S. figures as 100.
2. Value-added per labor hour for 1967-1976 for the two countries are calculated in 1970 prices and the nations compared using the 1979 interbank exchange rate of $1 = ¥219.47 for conversion.
3. 1979 figures have been estimated from 1976 figures applying the differential in the two countries' 1976-1979 material labor productivity indexes.

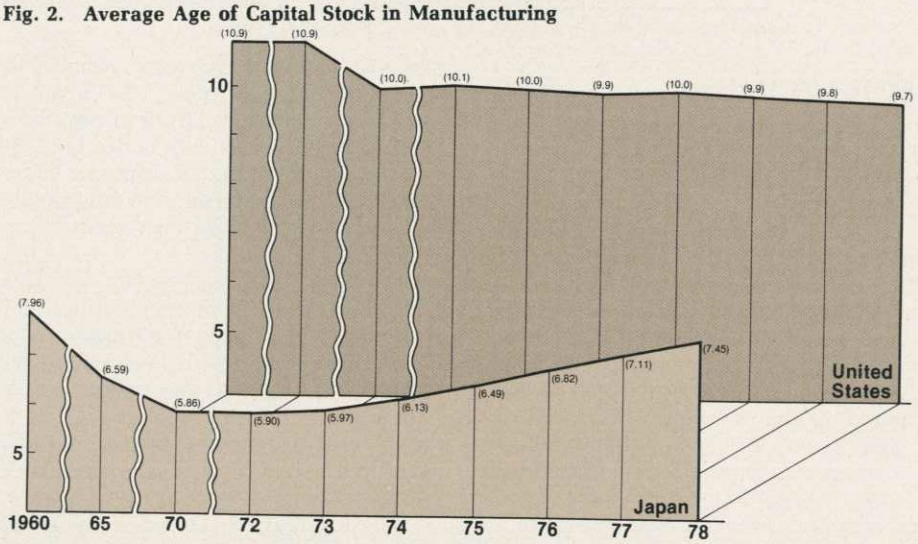
Source: MITI and Japan Productivity Organization cited in *MITI White Paper*.

Fig. 1. Ratio of Private-sector Plant Investment to GNP



Sources: *Annual Economic Statistics, International Comparative Statistics,* and *Bundesbank Reports.*

Fig. 2. Average Age of Capital Stock in Manufacturing



Source: Compiled from surveys by Japan Development Bank.

figures on Japanese productivity do provide a rough indication. Japanese overall productivity now ranks alongside U.S. productivity, and a considerable number of Japanese industries are probably world-leaders.

The next question is what has caused this rapid improvement in productivity. This is not, needless to say, an easy question to answer. Still, the first factor that should be cited is the high level of plant investment which Japan has sustained for many years. Japanese industry's plant investment in the 1960s was equivalent to approximately 18% of GNP. This is a strikingly high percentage in comparison with the approximately 15% for West Germany, 10% for the U.S., and less than 10% for the U.K. in the same period. This high level of plant investment, in addition to yielding quantitative benefits from the rapid increase in the capital stock ratio, also yielded qualitative benefits such as promoting the systematic introduction of new technologies and increasing the percentage of newer equipment in the total capital stock, thus contributing greatly to increased productivity.

The average age of the Japanese capital stock is considerably less than for the U.S., despite the recent tendency to convergence. This means that Japan is working with newer equipment than is the U.S. Japan's wide lead in the diffusion rates for numerically controlled (NC) machine tools and industrial robots, two contemporary state-of-the-art technologies, is indicative of the qualitative sufficiency of the Japanese industrial plant.

Workers holding a rally during the annual spring wage raise offensive.

The second factor to be cited is the more efficient use made of facilities. Although it is difficult to find quantitative data accurately reflecting this, one survey of Japanese and U.S. factories in the same industry has concluded that it takes Japanese workers less time to complete the same task.

It has also been pointed out by large numbers of observers that Japan is remarkably free of the worker absenteeism, job-hopping, loss of will to work, and other problems which have increasingly plagued the other industrialized countries in recent years. There is no doubt that this has stabilized operations and thereby enabled industry to achieve more efficient plant utilization.

These are the main factors which seem at first to account for the improvement in Japanese industrial productivity. However, strong investment and efficient use are for the main part descriptions of surface phenomena, and it is thus necessary to ask next what factors lie behind these surface phenomena.

For example, although Japan has made perhaps more progress than any other nation in introducing industrial robots in its factories, with over half of the world's industrial robots operating in Japan, there are a number of factors which have facilitated the introduction of robots: (a) While U.S. and European workers view robots as machines that will take away their jobs, Japanese workers, with their greater sense of company identification, see robots as machines that will free them from tedious work. (b) Japanese companies are very equalitarian and do not have a class of *gastarbeiter* or other workers relegated to the dirty or repetitive jobs. (c) Workers at the grassroots workplaces possess the intelligence and training to make fullest use of robots. Thus taking even just the single example of plant automation, the impossibility of getting at the essence with a simple quantitative analysis makes it necessary to come to grips with the economic and social factors existing within the corporation.

The issues involved are extremely complex, and it may be premature to try to offer any clear conclusions at this stage; yet an attempt has been made in this study to probe the economic and social factors contributing to the rapidly improved productivity within Japanese industry.

Table 4. Work Efficiency at Multinational Corporations' Factories

	Japanese factory	U.S. factories		U.K. factory
		A	B	
1967	1.00	0.95	0.88	1.25
1968	0.90	0.96	0.87	1.21
1969	0.88	0.95	0.87	1.25
1970	0.83	0.92	0.87	1.15
1971	0.84	0.92	0.91	1.20
1972	0.85	0.94	0.90	1.11
1973	0.84	0.96	0.94	1.11
1974	0.79	0.99	0.98	1.16
1975	0.84	1.04	1.02	1.12
1976	0.92	1.07	1.06	1.14
1977	0.97	1.02	1.16	1.20

Notes: 1. Data are for major multinationals in machinery.
2. Work efficiency is calculated as direct and indirect labor time divided by standard operating time.

Source: "Statistical Comparison of U.S. and Japanese Productivity in Standard Operating Times," Yasuo Kitauchi, *IE*, November 1980.

Table 5. Leading Shareholder's Percentage Holdings for Companies Listed on the First Section of the Tokyo Stock Exchange

	Institutional shareholders		Individual shareholders		Total	
	Number of companies	Percentage of total	Number of companies	Percentage of total	Number of companies	Percentage of total
Less than 10%	509	53.0	64	6.7	573	59.7
10—19%	140	14.6	25	2.6	165	17.2
20—29%	81	8.4	4	0.4	85	8.8
30—39%	55	5.7	2	0.2	57	5.9
40—49%	32	3.3	—	—	32	3.3
50% and more	48	5.0	—	—	48	5.0
Total	865	90.1	95	9.9	960	100.0

Source: Compiled from *Japan Company Handbook*, Oriental Economist, fall of 1980.

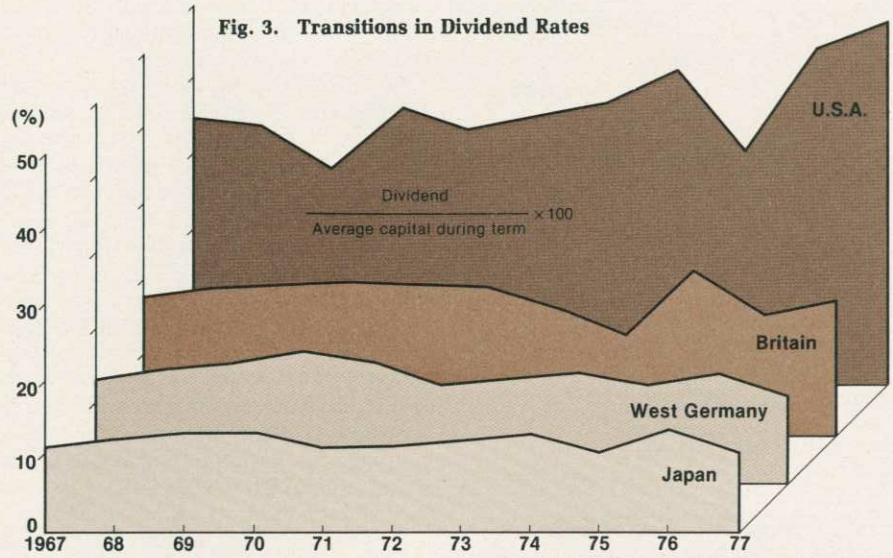
The Japanese Corporate Structure and Productivity

Legally, a corporate entity is an incorporated body whose members are also shareholders. This concept is reflected in the United States by the constant reference to "your company" in reports prepared for shareholders. In Japan, however, a person who refers to "my company" is usually simply referring to the company in which he works. It is generally accepted in Japanese society that it is the employees of the company, and not the shareholders, who are the members of the corporate family. The concept of the shareholder as a corporate member is clearly only a legal concept in Japan. It would be closer to the truth to describe a Japanese corporation as a united body of employees. This kind of corporate structure is unique to Japan, and it is closely related to the nation's high productivity rate.

The table above compares the percentages of shares held by corporations and individuals for companies listed on the first section of the Tokyo Stock Exchange. As shown, there are no companies in which individual shareholders own 40% or more of their shares. In fact, individuals hold 10% or more of the company's shares in less than 3% of all the companies surveyed. The growing trend to crossholding among corporations has caused the

Matsushita Electric's fully automated assembly line

Fig. 3. Transitions in Dividend Rates



Source: *Management Analysis of the World's Corporations for FY 1979,* Ministry of International Trade and Industry.

proportion of stock held by individuals to drop to only 30%. Excepting small and medium-sized enterprises, the large corporations which are the central pillar of Japan's business world are rarely managed or controlled by specific individuals or families.

Of course, the founders of major companies do wield tremendous influence within the companies, as evidenced by the positions of Konosuke Matsushita at Matsushita Electric and Soichiro Honda at Honda Motor. However, this is not influence derived from their positions as shareholders. In fact, Matsushita holds only 3% of his company's stock, and Honda only 5% of his, and neither of these men is even the leading shareholder. Rather, their influence stems from the respect accorded their obviously successful records.

When we look at other countries, however, we find that it is not at all unusual for corporations to be managed by the individuals who provide their capital bases. While this is to be expected in the developing nations, where ownership and management have yet to be clearly differentiated, it is equally true of the United States and Europe.

In France, for example, approximately half of the top 200 companies are family partnerships. Most of the companies in Europe are owned by major capitalists. In the United States, too, such family cliques as the Mellons, Rockfellers, and DuPonts have considerable control over industry. According to a 1976 *Fortune* survey, approximately 30% of the top 500 companies in the United States were family partnerships.

However, significant separation between capital and management has developed in the United States, and institutional investors such as banks' trust departments, which handle pension funds, are beginning to carry more weight than the capitalist families.

As a shareholder with a controlling interest, an institutional investor seldom interferes in the finer details of a corporation's management. Still, the institutional investor is able to exercise a high degree of control by influencing the choice of management personnel. The corporate manager is in actuality a person employed by the investor. He is evaluated according to how much he increases the value of each share. If he is unable to increase profits and ensure higher dividends within a relatively short period of time, he is easily fired. American managers are therefore always under strong pressure from the corporate investor.

The situation in Japan in quite different. The dividend rate is certainly an important factor in evaluating a corporation's business record, but it is no more than one factor. A manager who neglects technical innovation, who sacrifies the potential for future development, or who actually goes so far as to fire employees simply to maintain a high dividend rate, is not highly regarded. In fact, problems are likely to develop if the dividend rate is allowed to get too high. In the Japanese corporation, dividends are regarded as a capital cost in the same manner as interest payments on a bank loan.

The concept of "dividends as a cost" is certainly a strange one if we start from the premise that a capitalist corporation is organized specifically to provide a profit for its shareholders and that the dividend represents the results of the corporation's activities. The very existence of this "dividend cost" concept itself indicates that the shareholder is considered at best only an outside interested party in the Japanese corporation.

The phenomenon of cross-shareholding by corporation is one important factor which has made the theory of corporate equity ownership an empty litany. Toyota Motor is a good example. Here, the leading shareholder, with 5% of all shares, is Mitsui Bank. Lesser positions are held by Tokai Bank (4.9%), Sanwa Bank (4.8%), and Toyota Automatic Loom Works (4.6%). At the same time, Toyota Motor holds stock in its stockholders: 3.0% of Mitsui Bank, 5.5% (together with Toyota Automatic Loom Works) in Tokai Bank, and 1.9% in Sanwa Bank. Likewise, Toyota Motor has a 24.6% position in Toyota Automatic Loom Works. This kind of crossholding occurs not only among major corporations and banks. It is just as common for a large corporation to use its influence with a smaller enterprise with which it does business and to force the smaller company to purchase some of its shares.

This kind of mutual shareholding among corporations has resulted in an extremely abnormal situation in what is nominally a capitalistic structure. The situation is abnormal because the system of crossholding invalidates the capitalistic assumption that holding shares in a corporation indicates a degree of control over that corporation's management policies.

For example, if company A holds 51% of company B's stock and company B