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HRM Strategies in Structurally Depressed Industries: The Japanese Approach

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Abstract

Several adverse macro-economic trends beginning in the early 1970's drastically reduced the relative competitiveness of various sectors of the Japanese economy. Firms in Western (industrialized) countries that were faced with a similar loss of comparative advantage dealt with the problem by undertaking strategies of restructuring--primarily, retrenchment and downsizing strategies. However, in sharp contrast to the Western approach, the Japanese response to industrial decline, from a HRM standpoint, was a product of the political, cultural, and social institutions/values of that society. The Japanese government, business sector and the labor unions worked together to 'maintain' employment levels (albeit, mainly that of permanent employees) in order to minimize the costs of adjustment for the key stakeholder groups in particular, and for the Japanese society as a whole, in general.

Keywords: Corporate Restructuring/Declining industries; HRM strategies; Japanese management

1. Introduction

The spectacular rise of Japan as an economic power since World War II has few parallels in history (Patrick and Rosovsky, 1976; Vogel, 1979; Dore, 1986). That a nation such as Japan, devastated by war and with practically no resources, has been able to achieve a dominant position in the global trading environment within such a short period of time has kindled the curiosity of many scholars and policy-makers worldwide. Various reasons such as favorable geo-political developments and policies, astute and growth-oriented government policies, business-government cooperation, management policies and labor-management relationships, cultural traits, etc. have been identified as reasons for Japan's success (Yoshino, 1968; Hadley, 1970; Magaziner and Hout, 1980; Ouchi, 1981, 1984; Johnson, 1982; Aoki, 1984; Komiya, Okuno, and Suzumura, 1988; Johnson, Tyson, and Zysman, 1989; and Okimoto, 1989; Fruin, 1992; Yasutaka and Kobayashi, 2001; Sueyoshi, 2002).

However, macro-economic trends beginning in the early 1970's (such as the adoption of the flexible exchange rate, the oil shocks, the rise of the yen, global economic slowdown, competition from newly industrializing countries, etc.) marked the beginning of the end of the unprecedented and unparalleled growth that Japan enjoyed in the 1950's and 1960's. Specifically, these trends drastically reduced the relative competitiveness of various sectors of the Japanese economy. While the cost structures of

basic industries which depended on high levels of energy consumption (such as petrochemicals, aluminum, steel, and cement), increased tremendously, the manufacturing sector was able to absorb the increases in energy prices through energy efficiency enhancing and other cost-cutting measures. However, increases in energy efficiency reduced the demand for basic industries' materials which in turn suffered from increasingly intense import competition and structural excess capacity (Saxonhouse, 1979).

To combat the problems facing these industries, the Japanese government adopted a program of adjustment assistance in the late 1970's and early 1980's. In sharp contrast to the policies of Western industrialized countries and companies in those countries, the Japanese government and the business sector worked together to 'maintain' employment levels (albeit, mainly that of permanent employees) in order to minimize the costs of adjustment for the key stakeholder groups in particular, and for the Japanese society as a whole, in general (Rajan, 1994, 1995).

While firms in Western and other industrialized nations undertook strategies of retrenchment and downsizing (Hu, 2001; Hashim and Bakar, 2003), Japanese companies--whose policies of lifetime employment and seniority based HRM systems were widely known and well regarded¹ (Ballon, 1969, 1992)--adopted strategies that were distinctively pro-employment. This paper examines

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in detail the strategies (from a HRM perspective) that Japanese firms in declining industries undertook in conjunction with the Japanese government to 'maintain' employment levels.

2. The Legal Framework of the Japanese Government's Policies

Since most industrialized nations were affected by the slow-down of the global economy in the 1970's, the Organization of Economic Cooperation and Development's (OECD) Council of Ministers articulated in June 1978 the principles for guiding policy actions for "positive adjustment". Realizing that "free market" solutions could be cruel instruments for solving the problems of industrial decline, the Council of Ministers suggested that such "positive adjustment" policies were to be undertaken to improve factor mobility conditions--namely, industry access to capital, profitability of private enterprises, and functioning of labor markets (OECD, 1979).

States could pursue the three following goals through the use of "positive adjustment" policies: (i) assist the emergence of new, growth industries; (ii) ensure that firms remain competitive during periods of product or technological transitions; and (iii) ease the withdrawal of resources, including labor, from declining industries (Keyser, 1990). With regard to assistance to declining industries, the OECD mandated that government action be (i) temporary, (ii) transparent (observable by major trading partners), (iii) linked to the rationalization of obsolete capacity, and (iv) free of protectionist measures against imports (OECD, 1982).

While several ad hoc policies had been adopted in the past that targeted certain sectors of the economy, it was within the above framework suggested by the OECD that the Japanese government formulated comprehensive laws specifically dealing with the problem of industrial decline. Such laws were less sector-specific and more function-oriented than their predecessors.

The Law on Temporary Measures for Stabilization of Specified Depressed Industries (Tokutei Fukyo Sangyo Antei Rinji Sochi Ho) was passed in 1978 wherein 14 industries were identified as structurally depressed. Three other related laws: Law on Temporary Measures for those Unemployed in Specified Depressed Industries, Law on Temporary Measures for those Unemployed in Specified Regions, and Law on Temporary Measures for Small and Medium Enterprises, were also passed to specifically assist employers and workers in specified depressed industries and regions.

Plans for the restructuring of the 14 designated industries in the five year time frame of the above laws were thrown awry by the second oil shock and persistent depressed worldwide demand conditions (Peck, Levin, and Goto, 1987). Hence, in April 1983, the Japanese government passed the Law on Temporary Measures for the Structural Improvement of Specified Industries (Tokutei Fukyo Sangyo Kozo Kaizen Rinji Sochi Ho) wherein 22 industries (including 11 of the 14 industries designated under the first law) were identified as structurally depressed industries.

The three other related laws were also replaced by the Laws on Special Measures Concerning the Stabilization of Employment in Specified Depressed Industries and Specified Depressed Regions, and the Law on Temporary Measures for Dealing with Regions Related to Specified Depressed Industries. Designation of industries and regions was made more flexible under the second law to provide assistance to employers to (i) prevent worker lay-offs, and (ii) retrain workers and reassign them in new jobs within or outside the 'firm' (Sekiguchi and Horiuchi, 1988).

Please see Appendix A for further details of the list of the industries and the restructuring plans covered by the laws.

Since a majority of the industries designated as declining industries under the above laws were large-scale, energy-intensive industries, it is not surprising to see that firms from the manufacturing sector constituted the largest group of firms that adopted adjustment policies in 1975, 1987 and 1993 (Table 1). Though not as adversely affected, sales and service firms did also resort to some sort of adjustment measures or schemes to a lesser extent.

Table 1. Companies Adopting Employment Adjustment Measures: 1975, 1987 and 1993

Industry Year	Manufacturing			Sales			Service		
	'75	'87	'93	'75	'87	'93	'75	'87	'93
Adjustment In Use	71	40	41	37	14	29	Na	15	22
No Particular Adjustment	29	60	59	63	86	71	Na	85	78
Total (%)	100	100	100	100	100	100	Na	100	100

Furthermore, with the highest life expectancy on earth (75.9 for males and 81.8 for females), low fertility, and

¹ The lifetime employment policy is applicable only to full-time employees of large corporations, who are mostly male and who are graduates of prestigious universities. Though there is no formal written contract guaranteeing such lifetime employment, the practice is common knowledge and has been in vogue since World War II. On the other

hand, the treatment of female workers who are mostly hired on a temporary or part-time basis, and foreign workers by Japanese corporations generally fall short of international standards and conventions. However, this topic is beyond the scope of this paper.

low migration, the Japanese population is aging at a very rapid pace and Japanese firms are beginning to face the realities of a shrinking labor market. People aged 65 and above accounted for only 5 percent of the total population in 1950 but increased to 12 percent by 1990, and are projected to reach 23 percent by 2025.

According to the Ministry of Labor (1993), older workers aged 55 and above constituted 20 percent of the labor force in 1990 and are expected to increase to 27 percent by the year 2010. Hence, the Japanese government has repeatedly directed firms to raise the mandatory retirement age to at least 60 years, if not to 65 years (usually 55 at most establishments). According to the Ministry of Labor (1993), about three-fourths of Japanese firms with 30 or more employees have raised the retirement age to 60, and ninety percent of such establishments have indicated that they will do so by 1997.

Hence, Japanese firms (whose lifetime employment and seniority-based HRM policies are widely renowned) are being increasingly pressured by the government and by demographic trends to keep the older workers (i.e., those above 55) gainfully employed.

3. Corporate Restructuring and HRM Strategies in Japan

Corporate responses to industrial decline/structural excess capacity in the Western industrialized nations have typically included measures such as plant closures, massive lay-offs, elimination of entire levels of management, and adoption of early retirement programs. The governments in such countries either actively encouraged or tolerated such measures by the business community without realizing that they exacerbated the financial strains and health of the welfare state.

In contrast to the reductionary measures of the Western societies, the Japanese approach to the same problem--characterized by its political, cultural, and social institutions/values--is remarkably aimed at 'maintaining' existing levels of employment (Odagiri and Hase, 1989). In other words, Japanese companies adopted strategies of incremental employment adjustments which were adequate organizational cost cutting measures and yet, least disruptive from a societal standpoint. Specifically, the various measures employed by Japanese firms to deal with structural excess capacity are as follows (Table 2):

- (i) drastic reduction of over-time work
- (ii) hiring freeze, especially of new graduates
- (iii) worker retraining, reassignment, and dispatching (shukko)
- (iv) allowance for 'extended vacations'

Table 2. Type of Adjustment (Multiple Answers, %)

Industry Year	Manufacturing			Sales			Service		
	'75	'87	'93	'75	'87	'93	'75	'87	'93
Reduction of Overtime work	54	26	31	16	8	20	Na	5	14
No hiring	50	12	16	24	4	10	Na	5	9
Reassignment/ Dispatching	23	20	17	6	6	9	Na	3	7
Dismissal of Temporary / part Time workers	16	6	5	5	1	3	Na	4	2
Extended Vacation	Na	4	6	Na	1	5	Na	na	5
Temporary Company/ Factory Closure	20	3	2	1	0	0	Na	1	2
Voluntary retirement Or dismissal	5	3	1	1	0	0	Na	1	2

Source: Ministry of Labor (1993)

- (v) temporary factory shutdowns

Drastic reduction of overtime work: As seen from Table 2, this measure was one of the most popular means of adjustment adopted by Japanese firms. More than one-half of the manufacturing firms indicated that they had used this measure in 1975 with that number dropping to 26% in 1987 and 31% in 1993. Sales and service firms also adopted this measure, albeit in lesser numbers than manufacturing firms. In a society where employees usually work 30 to 50 hours of overtime work a month, the reduction of overtime work represents an effective tool for managers to cut costs during periods of economic downturn. For example, the New York Times reported an independent labor group's estimate that savings from overtime reduction were as high as three trillion Yen a year (equivalent to 27 billion US dollars in 1993). However, while overtime reduction meant that employees could spend more time with their families, it also reduced their income substantially and hence, was not welcomed by all.

Hiring freeze, especially of new graduates: One-half of the manufacturing firms and 16% of sales organizations adopted this measure in 1975. However, the numbers of firms resorting to such measures reduced dramatically in 1987 and then increased marginally in 1993 (Table 2). In general, a strategy of no new hiring is nothing more than a straightforward cost cutting strategy. However, in a country like Japan, such a strategy signifies that no one is hired from the pool of new entrants into the labor force for that entire year. In other words, an entire work force cohort group is eliminated within the company. Since such cohort groups are considered as the basic building blocks of the seniority system, a strategy of no new hiring is (was) not

well received by the present employees while at the same time diminishing the company's reputation as an ideal employer among potential employees.

Worker retraining, reassignment, and dispatching (shukko): Worker retraining and reassignment are not unusual for Japanese employees (even blue collar workers) as Japanese companies are noted for their job rotation and "generalist" training schemes whereby workers move from one job to another throughout their careers (Inohara, 1990). However, in worker dispatching scheme (shukko), an employee is moved from one company to its subsidiaries (for example, some workers from Mitsubishi Shipbuilding were sent to Mitsubishi Automobiles), and affiliates (for example, though not a member of the Mitsui group, Toyota Automobiles absorbed some of Mitsui Shipbuilding's workforce). About a quarter of manufacturing firms and 6% of sales firms used this strategy to deal with redundant workers in their firms in 1975. Service firms also started to resort to such practices in 1987 and 1993 (Table 2).

Traditionally, Japanese companies used to employ shukko to dispatch management personnel who had reached the retirement age to subsidiaries or affiliates to maintain a complex horizontal corporate network (Tables 3 and 4).

Table 3. Relationship of Firms Transferring Employees (Multiple Answers, %)

	Same indst. Group	Different indst. group
Capital Investment		
No capital investment	29.6	24.2
Receiving firm is larger	9.3	22.3
Receiving firm is same size	4.8	12.1
Receiving firm is smaller	57.4	44.9
Business Relationship		
No business relationship	9.3	10.5
Receiving firm is a supplier	59.3	19.5
Receiving firm is a customer	16.7	19.5
Receiving firm is a sales agent	29.6	46.9

Source: Inohara, 1990

Table 4. Reasons for Loan of Personnel (Multiple Answers, %)

	Receiving Related	Company Unrelated
Smoothing personnel administration	9.3	6.3
Improving age structure	7.4	2.0
Employee education	11.1	18.0
Managerial and technical education	59.3	45.7
Manpower redundancy	38.9	32.0
Security of job for retirees	42.6	14.8
Other reasons	14.8	17.2

Source: Inohara, 1990

As evident from Table 3, almost 60% of the transfers

within the same industrial group (keiretsu) were to smaller firms and /or also to suppliers. This lends some credence to the widespread belief that it is often the smaller or captive firms in an industrial group that bear the brunt of the restructuring effects and costs. When transfers took place between different industrial groups, the majority of workers who were sent to other companies ended up in smaller outfits and / or also to sales agents of their original employers.

Regardless of whether the receiving company was related or unrelated to the transferring company, the number one reason cited for "loaning" (transfer) of employees was managerial and technical education (Table 4). Security of job for retirees and manpower redundancy were also commonly cited causes for inter-company transfers of employees.

Moreover, in a practice known as amakudari (literally translated as "descending from heaven"), bureaucrats upon reaching the mandatory retirement age used to take up positions in large and medium sized firms companies and thereby reinforce the close links between the government and the business community.

However, in the context of a declining industry, shukko was not very popular with the workers or their families as it placed tremendous strains on them in terms of retraining and relocation despite being a source of continued income.

Strategies such as dismissal of temporary and part-time workers, temporary shutdown of factories, salary reduction among management personnel, and 'voluntary' retirement of older workers were resorted to by firms only as later options if the previously discussed cost cutting strategies did not mitigate the financial strains of the company (Table 2). This stands in stark contrast to management practices in American companies where workforce reduction in the form of lay-offs, early retirement, and retrenchment are often the first steps taken when faced with unfavorable market or demand conditions (Hoskisson and Johnson, 1992; Hoskisson, Johnson and Moesel, 1994; Anand and Singh, 1997; Zhao, 2001).

Furthermore, the Japanese government instituted various schemes under the related laws (passed in 1978 and 1983 – discussed in the previous section) whereby funds were set aside to assist firms institute retraining and reassignment schemes for their employees. Workers from depressed industries and regions were also eligible for and received government assistance in the form unemployment payments, subsidies, etc.

3. Discussion and Conclusions

In terms of Japan's response to dealing with problems of industrial decline, it was within the framework suggested by the OECD that the Japanese government formulated comprehensive laws specifically dealing with the

problem of industrial decline after the two oil shocks. While recognizing the advantages of market mechanisms in high-growth economies, the Japanese government (MITI or MOT) intervened in the restructuring of the structurally depressed industries because industry adjustments during the low-growth economy could take long periods of time, and because social frictions that are caused by adjustments were not necessarily small.

With regards to HRM strategies, the employment adjustment measures undertaken by Japanese firms in conjunction with the Japanese government and the labor unions reveal a complex picture of how Japan dealt with the problem of industrial decline. In sharp contrast to Western industrialized societies where companies adopted restructuring strategies that were predominantly driven by retrenchment and downsizing objectives, the Japanese response was a product of the political, cultural, and social institutions/values of that society--strategies that were aimed at 'maintaining' employment levels as well as minimizing the costs of adjustment to key stakeholder groups in particular, and to the Japanese society as a whole, in general.

Such strategies not only kept employment levels high, but also reinforced the traditionally strong ties between the labor force and the company. Finally, the efforts of Japanese managers (and bureaucrats) to retain the older workers was partly due to the rapid aging of the Japanese population and consequently, a shrinking labor force.

References

- Anand, J. and Singh H. (1997). Asset redeployment, acquisitions and corporate strategy in declining industries. *Strategic Management Journal*, **18**, 99-118.
- Aoki, M. (ed.) (1984). *The Economic Analysis of the Japanese Firm*. Amsterdam: North-Holland.
- Ballon, R.J. (1969). *The Japanese Employee*. Tokyo: Tuttle.
- _____, R.J. (1992). *Foreign Competition in Japan: Human Resource Strategies*. London: Routledge.
- Dore, R. (1986). *Flexible Rigidities: Industrial Policy and Structural Adjustment in the Japanese Economy 1970-1980*. Stanford: Stanford University Press.
- Fruin, M. (1992). *The Japanese Enterprise System: Competitive Strategies and Cooperative Structures*. Oxford: Oxford University Press.
- Hadley, E.M. (1970). *Antitrust in Japan*. Princeton, NJ: Princeton University Press.
- Hashim, J. and Bakar, A.A. (2003). The practice of corporate downsizing during economic downturn among selected companies in Malaysia. *Asia Pacific Management Review*, **8**(10), 27-42.
- Hoskisson, R.E. and Johnson, R.A. (1992). Corporate restructuring and strategic change: The effect on diversification strategy and R&D intensity. *Strategic Management Journal*, **13**(8), 625-634.
- _____, _____, and Moesel, D.D. (1994). Corporate divestiture intensity in restructuring firms: Effects of governance, strategy and performance. *Academy of Management Journal*, **37**(5), 1207-1251.
- Hu, L. (2001). Capital movement, unemployment and product choice, *Asia Pacific Management Review*, **6**(4), 425-446.
- Inohara, H. (1990). *Human Resource Development in Japanese Companies*. Tokyo: Asian Productivity Organization.
- Johnson, C. (1982). *MITI and the Japanese Miracle*. Stanford, CA: Stanford University Press.
- _____, Tyson, L., and Zysman, J. (eds.). (1989). *Politics and Productivity: How Japan's Development Strategy Works*. New York: Harper Business.
- Keyser, D.J. (1990). *Japan's Response to the Crisis of Industrial Adjustment: An Alternative Approach to Understanding the Japanese Industrial Policy-Making*. Unpublished doctoral dissertation, Yale University.
- Komiya, R., Okuno, M., and Suzumura, K. (eds.). (1988). *Industrial Policy of Japan*. San Diego, CA: Academic Press Inc.
- Magaziner, I.C. and Hout, T.M. (1980). *Japanese Industrial Policy*. Berkeley: University of California Policy Papers in International Affairs.
- Ministry of Labor. *Maigetsu Kinro Tokei Chosa Hokoku Nenpo (Annual Report of Monthly Survey of Labor Statistics)*, various years, Tokyo.
- Odagiri, H. and Hase, T. (1989). Are mergers and acquisitions going to be popular in Japan. *International Journal of Industrial Organization*, **7**, 1, 49-72.
- Okimoto, D. (1989). *Between MITI and the Market*. Stanford, CA: Stanford University Press.
- Organization of Economic Cooperation and Development (1979). *The Case for Positive Adjustment Policies: A Compendium of OECD Documents*. Paris: OECD.
- _____. (1982). *Positive Adjustment Policies: Managing Structural Change*. Paris: OECD.
- Ouchi, W.G. (1981). *Theory Z: How American Business Can Meet the Japanese Challenge*. Reading, MA: Addison-Wesley.
- _____. (1984). *The M-Form Society*. Reading, MA: Addison-Wesley.
- Patrick, H. and Rosovsky, H. (1976). *Asia's New Giant: How the Japanese Economy Works*. Washington, D.C.: The Brookings Institution.
- Peck, M.J., Levin, R.C. and Goto, A. (1987). Picking losers: Public policy toward declining industries in Japan. *Journal of Japanese Studies*, **13**(1), 79-123.
- Pollack, A. (1993). How Japan Hews To Tradition of Lifetime Jobs, *New York Times*, April 26.
- Rajan, M.N. (1994). The Institutional Embeddedness of Corporate Strategies in Declining Industries: Capacity Adjustment Strategies in Structurally Depressed Industries in Japan. *Unpublished Doctoral Dissertation*, University of California, Irvine.
- _____. (1995). Managing Structural Decline: Institutional Influences on Capacity Adjustment Strategies in the Japanese Aluminum Smelting Industry. *Proceedings of the 1995 Annual Conference of The Academy of International Business*, Seoul.
- _____. (1995). The Collective Management of Industrial Decline: Capacity Adjustment Strategies in the Japanese Shipbuilding Industry," *Best Paper Proceedings of the First Annual Conference of The Asian Academy of Management*, Penang.
- Saxonhouse, G.R. (1979). Industrial Restructuring in Japan, *Journal of Japanese Studies*, **5**(2), 273-320.
- Sekiguchi, S. and Horiuchi, T. (1988). Trade and Adjustment Assistance

in R. Komiya, M. Okuno, and K. Suzumura, (eds.). *Industrial Policy of Japan*. San Diego, CA: Academic Press Inc.

Sueyoshi, T. (2002). Holographic Intelligence: The essence of Japanese management. *Asia Pacific Management Review*, 7(2), 191-218.

Vogel, E.F. (1979). *Japan as Number One: Lessons for America*. Cambridge, MA: Harvard University Press.

Yasutaka, K. and T. Kobayashi (2001). Performance measurement

and evaluation systems in view of strategic management control: a survey of management accounting practices in Japan. *Asia Pacific Management Review*, 6(1), 53-72.

Yoshino, M.Y. (1968). *Japan's Managerial System: Tradition and Innovation*. Cambridge, MA: The MIT Press.

Zhao, J. (2001). Corporate Restructuring, International Diversification, and Firm Performance. Proceedings, Decision Sciences Institute, 1230-1232..

Appendix

Plan for Disposal of Facilities in Structurally Depressed Industries, 1978-1988

Industry	Targeted volume of disposal (000 tons)	
	Under the Depressed Industries Law (1978-83)	Under the Structural Law (1983-
Steel making by electric Furnace	2,850.0 (14%)	3,800.0 (14%)
Aluminum refining	530.0 (32%)	930.0 (57%)
Synthetic fibers and wool		
Nylon fiber	73.4 (20%)	as in 1978-83
Polyacrylonitrile wool	84.9 (17%)	as in 1978-83
Polyester fiber	44.9 (13%)	as in 1978-83
Polyester wool	78.4 (20%)	as in 1978-83
Biscoase wool		44.7 (15%)
Shipbuilding by use of A dock to build ships of over 5,000 GT	3,400.0 (35%)	
Chemical fertilizers		
Ammonium	1,190.0 (26%)	660.0 (20%)
Urea	1,790.0 (45%)	830.0 (36%)
Phosphoric acid by wet process		
Phosphoric acid by dry process		240.0 (32%) 810.0 (13%)
Synthetic fertilizer		
Spinning mills		
Cotton spinning	67.1 (56%)	as in 1978-83
Combed-wool spinning	18.3 (10%)	as in 1978-83
Ferrosilicon	10.2 (21%)	50.0 (14%)
Paper		
Linerboard	1,150.0 (15%)	as in 1978-83
Western-style paper		950.0 (11%)
Petrochemicals		
Ethylene		2,290.0 (36%)
Polyolefine		900.0 (22%)
Oxidated vinyl resin		490.0 (24%)
Ethylene oxiside		201.0 (27%)
Oxidated vinyl pipe		116.0 (18%)
Sugar refining		1,000.0 (15%)

Sources: Japan, MITI, *Kōzōfukkyōho no kaisetsu* (A commentary on the Depressed Industries Law) (Tokyo: Tsūshō Sangyō Chōsakai, 1978), pp. 280-99; and idem, *Kankōhō no kaisetsu* (A commentary on the Structural Reform Law) (Tokyo: Tsūshō Sangyō Chōsakai, 1983), p.82.

Note: Figures in parentheses are targeted volume of disposition as a percentage of total capacity.

^a Includes 530,000 tons to be disposed under Depressed Industries Law.

