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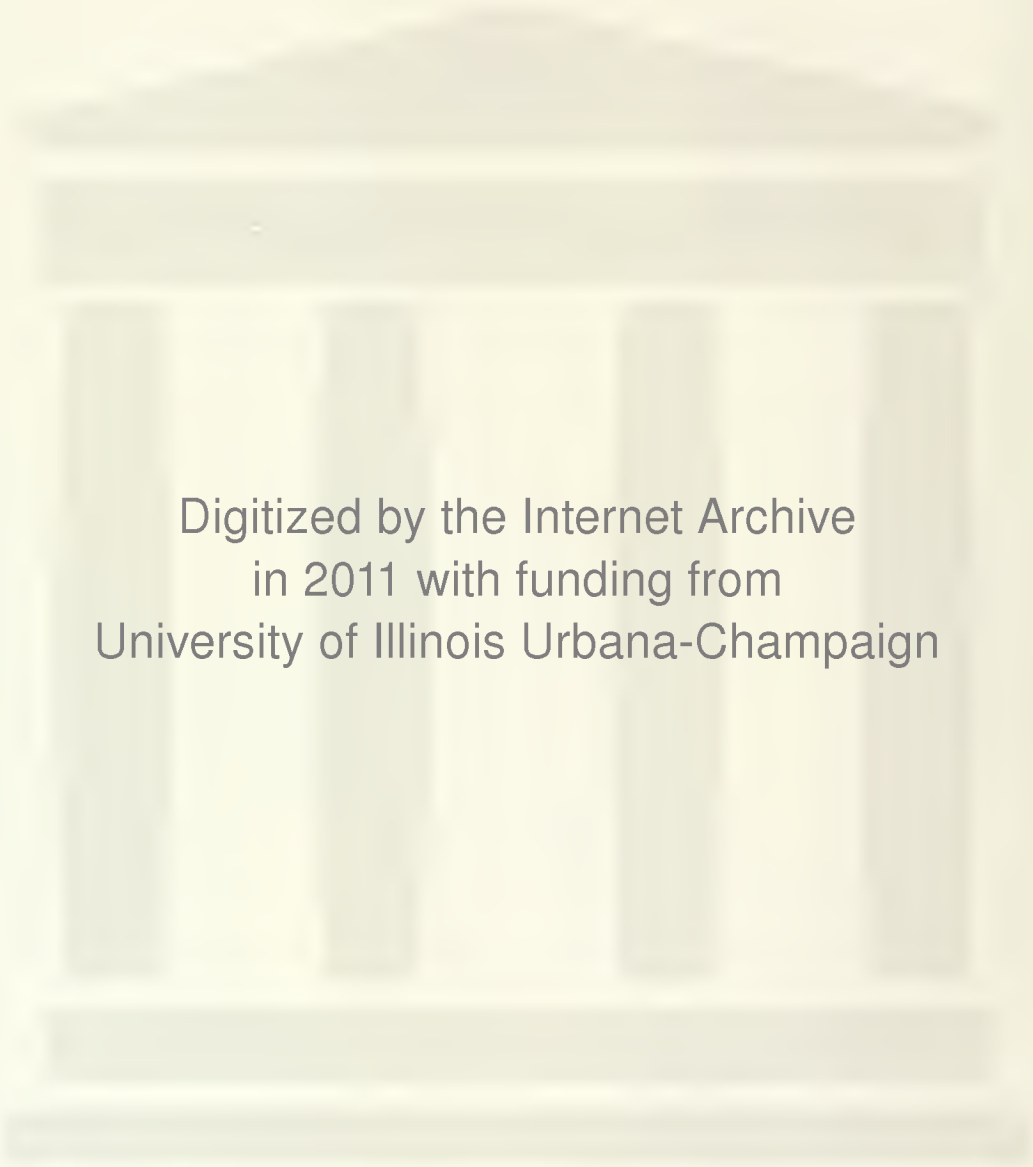

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FACULTY WORKING
PAPER NO. 364

The Need for and the Process of Employment Adjustment in Japanese Electrical and Electronic Industries

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FACULTY WORKING PAPER NO. 864

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April 1982

The Need for and the Process of Employment Adjustment in Japanese Electrical and Electronic Industries

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Abstract

Japanese firms are known to practice "permanent employment." It is said that there is absolutely no layoff between an employee's entry into the firm and his mandatory retirement. However, basic economic statistics indicate considerable fluctuations in output and employment in Japanese industries. This paper attempts to resolve the apparent inconsistency between "permanent employment" and workforce flexibility by a realistic description of what Japanese firms actually do. The secret of Japanese workforce management is that the employee status is diversified and that the core employees enjoying a "permanent" status are assisted by a large number of nonpermanent employees subject to hiring and firing by the employer at will. The author interviewed managers and union leaders of several electronics firms to learn about ways in which workforce adjustment was practiced. Although "permanent employment" covers a small portion of the workforce, firms obviously honor the ideal as much as possible. Their commitment to the ideal of "permanent employment" induces them to do things that firms in other countries would not do. The impetus for innovations on the part of management and for hard work on the part of workers is generated by the commitment to the ideal of "permanent employment." In the aggregate, this results in a measure of employment stabilization combined with technological progress and productivity growth.

Introduction

Journalistically speaking, "everyone knows" that the Japanese practice "permanent employment" which permits no layoff between hiring and retirement of an employee. Best-sellers have been written and millions of dollars of consultant fees are being earned by scholars and practioners who expound on this alleged virtue of the Japanese employment system. And yet even a cursory look at the basic economic statistics impresses one with considerable fluctuations in output and employment in Japanese industries. The data belie the implications of permanent employment. The notes that follow attempt to describe and evaluate how permanent employment relationships are in Japanese electrical and electronic industries. Changes in the product demand and technology as well as shifts in the competitive advantages of firms and industries are unavoidable in a dynamic capitalist economy like Japan's. Even if workers and employers were committed to the ideal of lasting employment relationships, the implementation of the ideal in practice would still be severely constrained by the dynamic forces of the economy. The notes below then amount to an exploration of the nature of the gap between ideal and practice. Japanese firms do seem to be committed to the ideal of employment guarantee for their employees. This commitment seems to have produced fascinating tendencies in the management of the factors and forces that determine employment. Simply put, it appears that Japanese firms, workers, unions, and government do things that their counterparts in other countries do not do, because of the commitment to the ideal of employment guarantee. The outcome of the efforts is still far from permanent employment as in its popular image. These notes attempt to fathom that distance.

Employment adjustment in the Japanese electrical and electronic industry

Observations on employment trends and changes vary depending upon the sources of data used. The usual Labor Ministry monthly labor survey is a sample survey of workers in establishments employing 30 or more "regular" workers. The Census of Manufacture covers all places of work engaged in the production of goods falling under various industrial categories. There are a few more surveys which report on employment either as their principal objective or as byproducts of their other concerns. Attempts to reconcile different figures from these various sources may have their own reward. But in this paper, we are concerned with the rough magnitude and direction of change and will ignore minor differences among various data sources until meticulous attention to details is called for.

Table 1 presents employment and its sex composition by major branch of the Japanese E & E industry. The classification of the E & E

(Table 1 about here)

industry is the one used in the study by the Federation of the Unions of Electrical and Electronic Workers. This classification is based on a common view of the E & E industry in Japan and indicates how workers themselves view the structure of the industry with different degrees of importance assigned to its various branches from the worker's point of view. Each branch requires some grouping of 3-digit or 4-digit categories in the Census of Manufactures.

The years up to 1973 were generally a period of rapid growth, although slackening of growth began in some branches around 1970. Most

remarkable is the peaking in 1969 of employment in the production of radio and television sets. In the whole E & E industry, employment hit the trough in 1975. In 1978, according to this particular source of data, overall E & E employment had not yet recovered its 1973 level. Two years later, in 1980, according to a different source of data (the Labor Ministry's Monthly Labor Survey), E & E employment was roughly the same as the 1973 level. Since labor productivity increased considerably during the same period, the return of employment to the 1973 level meant an enormously more productive E & E industry in 1980 than at any time before.

In the Japanese E & E industry, the segmentation of the work force by sex is a matter of particular importance, more so than in manufacturing as a whole. When the need for expansion or contraction of employment arises, the sex composition of the E & E work force responds sensitively to the required changes. To simplify an essentially complex matter, the core work force is usually male, while the peripheral work force is usually female. Of course, not all male workers can get into the core work force. There are many male workers who are peripheral--temporary, casual, subcontracting workers. Nor are all female workers peripheral. Many are engaged in the core activities of production; e.g., assembling. But "core" or "peripheral" is not only functional as pertains to a job, but also social as pertains to the person on the job. The social status differentiation outside the work place is such that there is a predisposition in the Japanese firms to staff the core work force with men or to consider men's jobs core activities even where these are functionally peripheral. In contrast, female workers employed

in functionally essential jobs are socially downgraded and treated as if they did not matter at all.

The proportion of female workers in the work force increases during an upswing of industrial activities and decreases during a downswing. This means that during an upswing, peripheral workers are added to the work force and that during a downswing, they are dismissed. In this way, the fluctuations in the core work force is minimized. Since labor problems (industrial conflict, social unrest, etc.) arise from the insecurity of male core workers, Japanese firms have long practiced prudent employment policy with respect to male workers. The equation of female workers to peripheral workers means the flexible use of female workers as shock absorbers for employment fluctuations. At the end of the rapid economic growth of the 1960s, the women workers nearly reached a parity with men in the E & E work force. If we allow for the casual and temporary components of male workers, it seems safe to say that at the height of economic expansion Japan's E & E industry filled more than half of its labor requirements by workers who would leave the jobs or could be made to leave on short notice. With this cushion of adjustable work force, it is no wonder that the downward employment adjustment after 1973 was carried out with a minimum of friction.

A statistically testable hypothesis that emerges from the above observation is that during the post-OPEC recession, the rate of decrease in employment should have been correlated with the proportion of women in the work force: that is, across industries, the higher the initial proportion of women, the higher the rate of decrease in employment. Once the observations about the role of female workers mentioned earlier

is accepted, this quantitative hypothesis would follow from them almost as a tautological restatement of the same thing. In fact, a detailed quantitative study bears this out.[1]

The quinquennial population census also shows differential trends in the movement of male and female employment in the E & E industry. For 1970, 1975, and 1980, paid employment by sex changed as follows (in thousands, though rounded to nearest 10,000, Japanese man):[2]

	Male	Female	Total
1970	770	600	1,370
1975	780	470	1,250
1980	820	590	1,420

It is remarkable that the fluctuations in total paid employment are largely absorbed by changes in female employment. Male employment records a net gain even at the bottom of the unprecedented recession of 1973-1975. Different sources result in different figures on the level and composition of employment, but the degree of agreement on the broad features of change is high: that is, steady or increasing employment of men, and fluctuating employment of women.

The role of women as peripheral workers in the Japanese-style employment system is further illustrated by differential movements of employment for men and women by size of enterprise. In 1970, women accounted for more than a half of the work force in enterprises employing 1,000 or more workers. The proportion was barely a third in 1979. In contrast, the proportion of women increased from 31 to 40 percent in the work force of establishments with 100 to 999 workers and likewise from 17 to 27 percent in the work force of establishments with 10 to 99

workers. Jobs in smaller establishments may be better than no work at all, but their benefits to women workers must be compared with the losses due to exclusion from employment in large high-wage firms.

The Federation study also presents statistics on employment by sex in 13 major E & E firms.[3] There was a steady decrease in women's employment between 1971 and 1979. With 1970 as 100, the index number for 1971 was 105 (peak) and, for 1979, 50. (There was a small gain in women's employment in 1980, raising the index number to 54.2.) The index of men's employment in these 13 major firms rose to 113.6 in 1975 and fell to 105 in 1980. Total employment of men and women peaked in 1971 and decreased during the 1970s. The Federation study notes this as a decline in the E & E industry's "ability to employ" and considers it a curious complement of a great increase in the economic strength of these industries during the same period. The Federation study attributes the employment trends to the acceleration of technological progress and the rise in the degree of "knowledge-intensity" in these industries requiring workers of higher education and better skills while eliminating unskilled and semi-skilled jobs on which large numbers of female workers were traditionally employed.

This vulnerability of women workers to the adverse impact of technological progress has aroused the concerns of the Federation. In conjunction with the data from the 13 major firms, the study adds this comment:[4]

> In contrast to other advanced countries, Japan has never given employment security to her women workers. Under Japanese trade unionism, women have not benefitted from the unique employment system of

> Japan. For these reasons, Japanese women workers are characterized by high labor mobility and return to household activities upon losing jobs. Because under these circumstances women have been able to survive without jobs or incomes, they have not considered themselves unemployed when they lose their jobs. Thus, the decline in female employment has not surfaced as an increase in unemployment. (Translated)

The study then adds that the generally short durations of job holding on the part of women workers--3 or 4 years at most--enable employers to introduce labor-saving technology without creating labor problems by synchronizing it with the completion of the attrition. In other words, by rapid employment turnover, women workers have contributed to their employers' technological progress. The study's conclusion on women workers is: "the adverse impact of technological progress on the employment of women is undeniable, and women are forced to make great sacrifices."[5]

What is fascinating about the employment experience of these 13 firms is that the steady decline in employment of women during the 1970s was apparently independent of the recession induced by the OPEC shock of 1973. Since men's employment increased between 1970 and 1975 and decreased after 1976 slowly, this too was independent of whatever effects the OPEC shock may have had on these firms. In another source in which 10 major E & E firms are examined individually, total sales dropped slightly in 1975 and net profits on the whole decreased by 50 percent.[6] The sharp decline in net profits was certainly due in part to the sharp rise in the energy and labor costs in 1973 and 1974. It appears that the firms absorbed the cost increases in the form of reduced profits but did not resort to shortrun cost-saving measures

like laying off workers or reducing production to any great extent. Almost unperturbed by the sharp shortrun change in economic conditions, these firms went about implementing their longrun technological innovations. These innovations had an adverse longrun effect on employment as indicated by the Federation study. The steady reduction of employment during the 1970s was not an adjustment to a decreasing demand for products but a technologically required adjustment under a strong longrun demand for many E & E products. In electrical and electronic industries as a whole, cyclical sensitivity of women's employment is observed, falling rapidly during a downswing (1973-75) and rising rapidly during an upswing (after 1975). But major firms seem to have been above the vagaries of shortrun market conditions. With steady hands, they planned and implemented incessant technological progress. The Japanese E & E industry seems to be dualistic.

Technological progress destroys and creates jobs. It is true that employment of men is fairly secure, but it is clear at the same time that men can remain employed only insofar as they can learn and perform new skills as existing jobs disappear and new jobs arise under continuing innovations. A good question is whether all men are capable of continuous learning and adaptation over their entire working lives. Those who can learn and adapt at the same pace as technological change move along with changing jobs and are rewarded with higher wages and benefits commensurate with rising productivity. But as workers age, even some of those who earlier were capable of going along may burn out at different life stages. In other words, the employer is beset with the

problems of incompetents and burned-outs as the side effects of technological progress. But Japanese firms have been adept at creating jobs for them. In certain instances, employers created subsidiaries specializing in landscaping and gardening services and transferred older untrainable employees to them. In order for these new business units to be economically viable, however, they would have to generate enough business over and above weeding and cleaning the employers' premises. To what extent the honoring of lifetime employment in this way can become a viable business proposition is therefore a good question. The effectiveness of "employer WPA" (employers' ability to generate make work projects) in Japan requires further research.

Major firms are apparently interested in keeping themselves lean and productive by diverting inessential or auxilliary activities to newly created subsidiaries by subcontracting them out to smaller firms. In this way, a closely knit group of firms is created under the leadership of a dominant firm. Streams of new products resulting from innovations also result in independent divisions and often independent firms. When a firm controls several tens of lesser firms engaged in diverse activities, it is possible to correlate individual employees' abilities and aptitudes with the spectrum of jobs available within the group and through reassignments and transfers ensure lifetime employment within it. The Japanese have perfected the fine art of business-empire building which is an important part of the mechanism of guaranteeing lifetime employment to male permanent employees.

Japanese trade unions have so far been cooperative with the pace of technological change under the initiative of managements and with the training, transfers and reassignments required by changing technology.

Procedures are worked out through consultations and collective bargaining. It is remarkable by international comparison that Japanese trade unions have never sought any control over the pace and kind of technological change to minimize the pains of learning and adaptation. Rather, the popular assumption shared by managements and unions alike is that Japanese workers have an infinite supply of personal resourcefulness and adaptability. This assumption puts tremendous pressure on individual workers who must sacrifice a large amount of their own time to acquire new knowledge and skills. Under the circumstances, the failure to move along with on-going change is a personal shame. He who fails drops out. Voluntary quits of this kind reinforce the camaraderie of those who remain and keep adapting. If an incompetent does not drop out, he is assigned to inconsequential tasks so he may not do any harm to the general pace of progress. True, he is kept in employ for life. But what he gets is the treatment that the Japanese humorously call "kaigoroshi"--to paraphrase, well-fed life imprisonment till death. The proportion of Japanese permanent workers under "kiagoroshi" is said to be non-negligible. This of course applies to men only. Women workers who are liberated from life-time employment are also spared the potential indignity of "kaigoroshi."

However, "kaigoroshi" cannot do much psychological harm to those "imprisoned." Japanese workers are remarkably insensitive to the status aspects of a job. Social democracy has attained a very high level based upon the equalizing fact that everyone is a member of the same firm (shain). The status reward is seniority, which translates into a rank and pay not necessarily correlated with what a worker does. Workers

in Britain or America are fairly discriminating about "good" jobs and "bad" jobs and believe that "job satisfaction" is an intrinsic quality of the job. For example, cleaning a latrine would never enter the content of any respectable job a worker seeks. Latrine cleaning is considered demeaning anywhere. But in Japan, doing it does not demean the person who does it. In order to show high-mindedness and to instill a spirit of service into workers, it is said that some company presidents have cleaned workers' latrines. In other countries, company presidents do not even share a lunch table with workers. In Japan, examples abound that suggest the non-existence of well-defined and well-guarded job demarcations. Doing different things upon a moment's notice does not annoy or inconvenience Japanese workers. They do not instinctively ask the way American or British workers do whether the new job is better or worse than the present job. Job rotations and transfers in Japanese enterprises are accepted by workers with no special feelings for or against.

Occupational classification then has little value as a predictor of personal satisfaction or social status as far as paid employment is concerned. Independent professions like medicine and law enjoy appropriate recognition in society at large. But "organization men" or "salary men" draw their social standings from the relative importance of the organizations or firms of which they are "members." The Federation study frequently referred to above has data which indicate the uselessness of occupational classification. Based on the quinquennial population census, between 1970 and 1975, among white-collar workers of the E & E industry, specialist and technical workers decreased by 22

percent.[7] In absolute numbers, the increase in sales workers was roughly equal to the decrease in specialists and technicians. Among the specialists and technicians, scientists and researchers almost disappeared! In view of the vigor of the Japanese E & E industry during the 1970s, this statistical picture of occupational classification is incredible: the picture is that of a grave crisis. Fortunately, however, it is probably more appropriate to say that company employees did not know how to describe their occupations, and that their frequent rotations, transfers and promotions resulted in unreliable enumerations. Or the statistics may be suggesting that some large scale transfers of specialist-technician category to sales during the recession: for example, sales engineers.

Footnotes

[1]Kuramitsu Muramatsu, "Koyo chosei no kettei yoin" (Determinants in employment adjustment), Nihon rōdō kyōkai zasshi (Journal of the Japan Institute of Labor), vol. 23 (January 1981).

[2]Denki Rōren, Denki sangyō no chūkiteki koyō tenbō, p. 60.

[3]Ibid., p. 74.

[4]Ibid., pp. 74-75.

[5]Ibid., p. 75.

[6]Kyoikusha, ed., Denki gyōkai jōi 10-sha no keiei hikaku (The electrical and electronic industry: 10 premier firms compared) (Tokyo: Kyoikusha, 1980), Chapter 8.

[7]Denki Rōren, op. cit., pp. 62-63.

Table 1

Employment in the electric and electronic industry by branch and sex, selected years, 1965-78
(Numbers of persons)

	1965	1969	1973	1975	1978
Men and women					
Total	851,454	1,268,242	1,398,738	1,214,082	1,239,935
Industrial E & E	236,787	314,609	350,609	311,065	307,644
Telecommunications	87,543	90,176	98,748	86,062	79,361
Electronic apparatus	20,664	53,434	78,569	86,563	101,185
Household E & E	88,416	100,465	112,318	108,455	111,864
Radio & TV	58,301	97,417	63,690	52,628	46,308
Sound equipment	39,458	130,550	184,892	163,152	181,170
Parts and components	193,775	319,002	339,041	263,096	271,755
Others	126,510	162,589	170,871	145,438	140,648
Women[1]					
Total	338,165	604,354	656,836	515,509	535,766
	(39.7)	(47.7)	(47.0)	(42.5)	(43.2)
Industrial E & E	73,748	106,608	125,070	102,019	105,508
	(31.1)	(33.9)	(35.7)	(32.8)	(34.3)
Telecommunications	30,744	33,375	34,459	27,404	23,265
	(35.1)	(37.0)	(34.9)	(31.8)	(29.3)
Electronic apparatus	4,333	16,300	25,245	25,063	30,106
	(21.0)	(30.5)	(32.1)	(29.0)	(29.8)
Household E & E	30,646	42,702	48,599	40,987	45,543
	(34.7)	(42.5)	(43.3)	(37.8)	(40.7)
Radio & TV	27,220	52,820	30,987	25,120	20,542
	(46.7)	(54.2)	(48.7)	(47.7)	(44.7)
Sound equipment	19,413	76,245	114,067	96,280	109,655
	(49.2)	(58.4)	(61.7)	(59.0)	(60.5)
Parts and components	112,083	202,393	201,104	142,025	143,435
	(57.8)	(63.4)	(59.3)	(54.0)	(52.8)
Others	39,978	73,911	77,305	56,611	57,712
	(31.6)	(45.5)	(45.2)	(38.9)	(41.0)

Sources: Denki Roren, Denki sangyo no chukiteki koyo tenbo (1981), p. 9, p. 16.

[1]Figures in parentheses are proportions of women in total employment in percent.

Impressions from interviews with managers and union leaders

These interviews are a great help for insights and perspectives. They also result in rich crops of public relations materials, even some delicate materials not meant for outsiders, books and articles by past or present presidents, serious publications by specialists with doctorates who in many places also double as part-time lecturers at colleges and universities, company and union histories, employee newsletters and union journals, all sorts of handouts and fliers. For analytical purposes, these tangible and durable materials are more valuable in the long run than notes and recollections on conversations, films or displays. Nevertheless, talking with people who run organizations is useful for weighing the various factors that one obtains from the other "tangible and durable materials."

To the question "how do you cope with possible redundancies due to the weakening of demand for certain products or under the impact of a general recession?" managers everywhere answer the same way first before they take up details in many different ways: "we cut hours of work, cut or eliminate dividend payments, reduce wages and salaries if necessary-reduce bonuses for sure, or move people around from plant to plant, division to division, or firm to firm within our group of firms." Laying workers off does not enter the list of first actions the firm takes in response to poor sales or bad economic conditions.

One is impressed with two principal characteristics of major Japanese firms: i.e., they are diversified, multi-product firms, and each "governs" a large group of firms which includes banks, subsidiaries,

affiliates, subcontractors, suppliers, dealers, movers, wholesalers, and retailers. Japanese firms' obsession with the market share enables novelists (and some economists) to liken their oligopolistic competition to struggles among powerful feudal lords of bygone days. Japanese sales activities certainly smack of large-scale feudal maneuvers of foot soldiers. The feudal analogy becomes more serviceable if we view Japan as a system of oligopolistic domains precariously held together by the shogunate of Keidanren (Federation of Economic Organizations). The oligopolistic domain is the aforementioned group of firms with a major manufacturer as its leader. It is probably no exaggeration to say that the grouping of firms is a basic economic institution responsible for the flexible dynamism of the Japanese economy.

In a major Japanese firm, thanks to its diversification, even as demand for some products declines, there are always other products enjoying strong demand. Thus, transfers of workers between factories or divisions alone may enable the firm to absorb the need for a sharp reduction in the workforces of some of its divisions. Transfers of members to the member-firms of the group follow the same logic, though with minor procedural complications arising from the legal independence of the firms. The only real constraint then is the degree of willingness of the workers and unions to cooperate. This is a function of the quality of labor-management relations. But it is obvious that Japanese management makes every effort to win and maintain workers' and unions' confidence as a basis for cooperation. When sacrifice is called for, the axe first falls on the high and mighty--stockholders, executives

and managers who must swallow reductions in dividend payments and salaries as well as organizational reform including elimination of certain positions. After the evidence of sacrifice by these more favorably placed members of the company community is demonstrated, the remaining share of hardship is allocated to the workers. Pecuniary sacrifice imposed on them is proportionately less than that imposed on stockholders, executives and managers. But the workers must adapt to the required changes in the job structure and manpower allocation. There are extensive reassignments and transfers. The unions usually ask for and obtain safeguards to reduce the pain-cost of adjustment on the part of the workers.

Actually, moving around is not such a great pain to Japanese workers as it would be to workers elsewhere, because job rotations between divisions or between plants at different geographical locations are institutionalized and accepted by all concerned in the Japanese firm. If there are concerns over worker adaptability and trainability, technical as well as social, at new places of work, the fine art of Japanese management has pre-empted the potential problems. Workers are screened carefully at the time of hiring with respect to these and other qualities that make the lifelong employment workable. And the firm subsequently invests heavily in the management of relations with each employee looking after all his personal and career needs. This system gives to management an almost total knowledge of ability, aptitude, aspirations, outlook, habits, tastes, etc. to the extent that may horrify even a half-hearted individualist who places at least some premium on the autonomy of individual personality. In return, each

employee is trusted with most detailed information on all aspects of the firm which would horrify anyone concerned with "managerial prerogatives." Although this kind of employment relationship may give rise to misgivings on the part of non-Japanese observers, it apparently works well in Japan.

In the course of an interview, a manager at one company recalled how the experience during the recession of 1965, which hit the household appliances particularly hard, served as a usable precedent for the employment adjustment called for under the OPEC-induced recession of 1973-75. In 1965, one third of several thousand blue-collar employees were redundant. Although the household appliances divisions had no work, the telecommunications equipment divisions were extremely busy. The redundant workers were therefore transferred from the slack divisions to the busy divisions. A small number of workers left over were temporarily transferred to other firms in the group. In order to secure the cooperation of the employees with the transfer program, the company opened its books and explained everything to them about the state of business. The company and the trade union of its employees already had a labor-management consultative council since 1951 instituted in the wake of the previous year's serious labor disputes. The company promised the transferred employees that they would be out for no longer than six months and that their wages and benefits would not change. Some of the plants to report to were far away from the transferred workers' residential area, requiring a temporary separation of the workers from their families. In these cases, the company-paid trips back to homes and families were granted once a month. Although the

workers were integrated into the work force of the divisions and firms to which they were transferred, their foremen at the original work place went with them to act as general advisors though with no power to supervise them. The directors and supervisors of the transferred workers' original divisions visited them at least once a month to assure them that their relationships with the original divisions were intact. The transferred workers fitted well into the new places of work. Their re-orientation and re-training took two or three weeks at the most. The workers returned to the original divisions after six months, but by then the recession of the household appliances was over. The employment adjustment under the OPEC shock was an expanded and refined application of the 1965 experience, according to this manager.

Union leaders of the firm were also interviewed. Although the mood was more somber in the union office than in the company reception room, the union leaders on the whole confirmed the largely peaceful adjustment to the need for a reduction in the workforce during the OPEC recession. The union cooperated with the company through consultation for planning and implementing the required workforce reduction. The union and the company consulted and agreed on the number of persons to be reduced and the work places where the work force should be reduced. Then, the foremen of these work places were enpowered to select which workers should be transferred out of these places. A grievance procedure was also provided for along with the program of work force reduction and transfer. Although the union would rather have work brought to the slack divisions, it did not object in principle to the transfer of workers from slack to busy divisions within the firm. But in 1974,

reshuffling alone could not guarantee work to everyone. A layoff (Japanese style) was considered necessary and implemented. Three to four thousand workers in nearly 30 plants were laid off for a week at different times. Fortunately, the E & E industry got out of the recession by the middle of 1975. The really serious period was only about six months.

A retired manager of another diversified E & E firm was interviewed. He shed light on how the managerial staff was handled in the course of employment adjustment. First, the legitimacy of the need for adjustment had to be established. Secondly, there had to be a principle of equitable sharing of the burden. An across-the-board reduction of salaries was declared for managers and executives. Some of the managers were called in by executives or the president and suggested that they move to different jobs or to different companies in the group. White-collar and blue-collar workers were transferred to different plants or to firms inside or outside the group. The union objected to any drastic measure. But eventually the union's consent to the plans for adjustment was secured through negotiations on acceptable procedures and terms of treatment. According to this ex-manager, the experience of his firm during the OPEC recession de-mythologized "lifetime employment." He said that lifetime employment was not a binding principle, but only a statement of preference common among paid employees anywhere. He emphasized the insecurity of the managerial class during the recession. Managers were the first group to suffer cutbacks in pay. Some of their positions were also eliminated under organizational reform to cut out the "excess fat." Paycuts and status changes (demotions and transfers)

were communicated to them by a piece of paper--jirei (statement of order) simply saying: "Your salary is cut by X percent, and you are reassigned to Division Y, Section Z." As far as managers are concerned, according to this ex-manager, the procedure and outcome were almost ruthless. But the ethic of all this is that those who take the suffering in stride are respected and that those who complain and hesitate are scorned. A leader of the trade union of this firm confirmed that the adjustment was no less drastic with respect to the production workforce which was halved during the recession with many workers either laid off or transferred to sales or other activities.

Similar stories were repeatedly heard at a few other firms and unions. Obviously the problems of adjustment to the OPEC recession of 1973-75 did not last long. These increasingly shaded into long-term problems of adjustment to changing markets, technology, and productivity. The need for workforce reduction coupled with the hiring of new workers who are better qualified for new technology poses many new problems that did not exist when the burden of adjustment to a short-term recession had to be equitably shared. Trade unions call the new state of affairs "rationalization." There are several aspects of "rationalization" that worry workers: (1) some jobs disappear and new jobs come into being, (2) the absolute mass of the labor input may decrease depending on how fast productivity increases relative to the expansion of the product market, (3) product innovations and marketing ingenuity a firm is capable of may fall short of the extent needed for ensuring everyone lifetime employment, (4) existing employees' willingness, adaptability and capability for retraining may fall short of the pace

and extent required for cost-effective retraining. If employees cannot keep up with rationalization within the bounds of pain-costs they can accept, they may resort to individual or collective measures that obstruct the progress of rationalization. Labor-management relations sour, and rationalization is aborted in the costly chaos of industrial disputes.

Interviews at several firms suggest that both managements and unions are fairly optimistic about workers' adaptability and capability for continued retraining--learning new jobs from time to time as changing technology requires. Understandably managements are more optimistic than unions. Japanese firms already have a sophisticated art of personnel management, the essence of which is an unusual degree of care for screening at the time of hiring so that employees with the potential for sustained career development in the firm are identified. The ideal employee is one who moves along with a succession of jobs (job ladder) within a given technology and between different technologies. Japanese management perhaps assumes that such employees can be found in a sufficient number to form the core of the work force. How to handle the laggards and burned-outs is also within the Japanese techniques of personnel management. Although this may sound like a contradiction in terms, any major firm in Japan aspires to make itself as <u>small</u> as possible in terms of employment. Smaller employment is viewed desirable from the standpoints of productivity growth coupled with increasing technological sophistication and maneuverability. This means that a major firm creates, acquires, and cultivates its subsidiaries and affiliates to which unwanted employees can be transferred.

A visitor to any major firm is given a large brochure which somewhere proudly shows a long list of subsidiaries and affiliates. At one major firm specializing in telecommunications equipment, the managers interviewed said that efforts to maintain the core workforce not only small but well-balanced in a pyramidal structure between age groups and between different levels of command included the aggressive creation of subsidiaries and affiliates by "spinning out" divisions after nursing them in the firm for some time and that employees were transferred to them as they moved up in the hierarchy to levels where the supply of positions became smaller. This means that many employees terminate employment at this firm and move to other firms at different stages of their lives. For them, there is no lifetime employment at this firm. But apparently their lifetime employment is guaranteed within the group of firms that this firm leads. This also means that the firm has to be extremely innovative in new products to "spin out" subsidiaries and affiliates.

Although it may sound rather ironical, aging is viewed as a basic problem making it difficult to maintain lifetime employment. This is ironical, because a lifetime cannot be free of aging, and because anyone would have thought that lifetime employment automatically contained appropriate responses to aging. The Japanese firms are currently under pressure from the government and unions for raising the retirement age to 60 or beyond. It is true that the retirement age is being raised, although a large proportion of firms still set it at 55. But what is interesting is that many firms subvert the retirement age by finding ways to retire their employees at various life stages before

the retirement age. The firm just referred to is one example. It is commonly believed in Japan that the performance of many production workers peaks at about age 40 and that retraining becomes increasingly difficult after 40. They are therefore unfit as employees of a technologically dynamic firm. It is argued that they should be transferred to technologically less dynamic firms where old-fashioned familiar jobs may still be available although they have disappeared in the parent firm.

How the performance of a worker can be maximized over his life cycle is a complex question to which little specific attention so far has been paid. The conventional labor management techniques are rarely examined critically as to whether the assumptions on which they are based are accurate or desirable. Lifetime employment has so far been considered inseparable from a wage scale dominated by seniority increments. Under this system, the earnings of an employee keep rising up to the very moment of his retirement. When the demand for a higher retirement age arose, the question suddenly arose as to whether the continuation of rising pay over the additional years in employment was really justified. This then called into question the rationale of the entire seniority-based pay scale. If seniority increments are not justified after age 55, it is possible that the lack of justification may start at an earlier age. It may well be true that an employee's performance in certain lines of operations peaks at around age 40. Should this be true, the seniority increments after age 40 would be unjustified. If employment should continue beyond age 40, then, "lifetime employment" would have to be dissociated from the seniority wage scale.

Once we start quibbling the rationale of lifetime employment in this way, it is unavoidable to notice that performance over a life cycle varies from individual to individual, and from activity to activity. It would be folly to draw one curve and assume that everyone within a firm or an organization conformed to that pattern. But once allowance is made for individual variations in performance and pay, the argument that all should stay in the same firm till retirement loses its force, because poor performance in one firm and therefore poor pay do not mean that the individual concerned has no competence that may command higher value and result in better performance elsewhere. Furthermore, there are other problems respecting how performance is evaluated, where it is evaluated, how workers are assigned to jobs, whether the opportunity for training is equal for everyone, etc. There are also personal, health, and family problems of employees that employers who profess to be concerned with employee welfare should not overlook as determinants of their performance. Once attention is directed to these problems, it is clear that there is not much knowledge about them in the philosophy, logic, and practice of the conventional lifetime employment system of Japan. This suggests that the employment relationship can be individualized and that the employer and each employee can periodically review the record and prospects of their relationship, examine all conceivable career courses available inside and outside the firm concerned, and choose that course both consider optimal for the type of person the employee is and the potential and skills he has.

Mr. Tadashi Amaya, who directs a project on career development at Oki Electric, a major telecommunications equipment producer, has presented to the Sumiya Council for Intermediate-Term Employment Policy a model plan for individualized career management. He points out that the economic fundamentals which made the conventional lifetime employment system possible have recently disappeared under the impact of economic slowdowns and aging population. He then criticizes the incoherent practices of Japanese firms that fail to meet the challenge of the different economic circumstances to the employment system. His plan liberates the individual employee from the straight jacket of the conventional lifetime employment system by expanding the scope of choice at each of several strategic points in the life cycle with respect to the course of action for the next several years. Some general correlations between age and factors that determine the individual's taste, motivation, performance, etc. is postulated. Even the individual's knowledge of himself is a changing function of age. The Amaya plan synchronizes the individual's personal growth over the life cycle with his career development with a view to the fullest possible realization of the individual's potential. The role of the employer is important. The presumption is that the employer who hires a worker fresh out of school should normally keep him till retirement at 60 or a higher age appropriate to the general trend of the aging of the Japanese. The employer should supply all the requisite services for periodic reviews of the personal and professional growth of each employee and for counselling on personal and family problems that arise from different phases of the life cycle. The employer and employee jointly determine the

optimal course of career development. In preparation for the possibility that the optimal course of career development for some employees may lie outside the firm, the employer should maintain appropriate placement service and be able to find the best alternative employers for them. Thus, uninterrupted employment commensurate with rational inter-firm mobility (a new form of lifetime employment) is ensured by joint efforts of the employer and employee.

The almost complete individualization of career plans and problem solving in the Amaya proposal seems to neglect the possibility that a collective approach may still be productive with respect to common problems that employees at similar life stages share among them. The conventional seniority-linked pay scale at least purports to cope with one common problem among employees: i.e., rising family expenditure as the size and needs of the family grow. There are also other problems that are correlated with age; e.g., health problems, anxiety about the future, uncertainty about the meaning of life and work, fear of being out of touch with the wider world, frictions in relationships with the spouse and children, etc. These personal and micro-social problems discourage work performance in varying degrees. At a major diversified electric-electronic company, the management and union coordinate the operation of age-linked programs to cope with these problems. The basic method is group instruction and discussion. The employees in their early forties are especially prone to personal and family crises which often demoralize them in relation to work. But other age groups also have their problems. The management and union recently structured

the problem-solving programs for different age levels so that employees move through them as they become older.

Thus it appears that the adjustment of the work force to technological change is just one part of the unavoidable adjustment of man to his changing circumstances. What strikes the observer as a result of interviewing "both sides" of industrial relations, management and union, is that in Japan, both understand the nature of the changing circumstances almost exactly the same way and that both agree on the actual and likely problems and the essential elements in the solutions looked for. In short, in Japan, the union is very much like management, and management is very much like the union. Many company presidents behave almost like union leaders when they make public speeches or write books. They exalt the importance of human resources and recount endless stories of how workers have contributed to innovations and productivity. Regardless of rank or station, each worker is a manager who is unusually well informed of the state of his company and of the state of the general company which influences the performance of his company. Especially, union leaders and managers are people of the same breed. This is no mystery, because in Japan good union leaders are usually co-opted into management and become good managers. The cross-fertilization of union experience and managerial experience homogenizes the taste and culture of the enterprise. Union activities train workers for managerial functions. In many Japanese enterprises, the company headquarters and the union halls co-exist side by side. The secretariat of the union is run by the same business principles by which the company is run. The

union and the company only differ in details not in principles, which makes consultation and bargaining quite efficient. Different principles generate a conflict, requiring power to resolve it. Different details can be patched up by "give and take," often by "give and give."

Foreign threat to employment in the Japanese electrical and electronic industry?

There is no threat from international trade or Japanese firms' foreign direct investment to employment in the Japanese electrical and electronic industry (E & E industry hereinafter). This is a growth industry in Japan, having arrived at the position of a leading industry after other well-known leaders (textiles, shipbuilding, petro-chemicals, steel, etc.) have run out of steam. The Japanese E & E industry suffered from the OPEC shock but rebounded vigorously from 1975 on. In terms of value added, the crisis of 1973-75 only wrought a minor dip in the steeply rising long-run growth curve. E & E employment bottomed out in 1975 and recovered the loss almost completely by 1980. Changes in E & E employment during the 1970s will be discussed in the next section. For the present, some statistical data are presented to show that (1) imports pose no problem for Japan's E & E industry and that (2) overseas investment by Japan's E & E firms, instead of exporting jobs, rather creates more jobs in Japan. Table 1 presents Japan's E & E imports as percent of its E & E exports. It is clear that Japan exports far more E & E products than it imports. Although the data are not entirely clear about trends, one may see a faint sign of decreasing importance of imports in Table 1.

(Table 1 about here)

Japan's E & E imports predominantly come from more developed countries which constitute Japan's reference group for international competition in economic growth and technological progress. In one

advanced branch of the E & E industry, Japan's imports rise to a significant level, more than half and sometimes more than 80 percent of its exports (electric apparatus for medical purposes, radiological apparatus). For the Japanese, this is an incentive for improvements in technology and production. The small weight of less developed countries as a source of Japan's E & E imports is of course not surprising: their technological backwardness relative to Japan. Somewhat surprising, however, is that less developed countries are not showing stronger performance than shown in Table 1 in the product lines where some of them at least, those usually called NICs, may have technologically caught up with Japan--radio and TV. Japan imports almost no radio or TV sets from more developed countries. The radio and TV sets from less developed countries are a miniscule proportion of Japanese export of these commodities. To this extent, then, one may say that comparative advantage is being reallocated among countries. Given the smallness of figures, however, the increasing strength of some less developed countries poses absolutely no threat to Japan's E & E industry as a whole or even in its potentially vulnerable branches.

There is another source of potential threat to Japanese employment--Japanese firms' foreign direct investment setting up plants abroad to produce things that could be produced in Japan. In some developed countries, foreign direct investment by their companies is even considered equivalent to "job exports." Japanese foreign direct investment increased rapidly during the 1970s and there was some fear of job exports at first. But it evaporated quickly. The dominant view today is that far from exporting jobs, Japanese companies have been using

foreign direct investment as a means of creating jobs at home in Japan. If this view is held exclusively by company managements, one may consider it a piece of propaganda. But since trade unions are no less positive toward the employment effects of foreign direct investment, one must suppose that there is something to the Japanese style of foreign direct investment that is different from the practices of companies based in other countries. Ever since 1973, the Federation of the Unions of Electrical and Electronic Workers (Denki Rōren--the Federation hereinafter) has been studying the employment effects of Japanese E & E firms' foreign direct investment. Findings are reported once every other year. The latest report consolidating old and new information was released in 1981. Its general conclusion is that foreign direct investment has had positive effects on employment in Japan. The Federation's earlier misgivings about possible job exports are now completely dissolved.

The basic reason for domestic job creation through investment abroad is that overseas production is a form of export substitution in product lines which are most vulnerable to international competition or various countries' protective policy. Production at the finishing stage in the host country requires imports of intermediate inputs and capital goods from Japan. Thus, insofar as overseas production protects and promotes the markets for Japanese goods, foreign direct investment can be seen as a means of protecting and promoting Japanese employment in industries producing intermediate inputs and capital goods. A good question to ask in this connection is whether Japanese firms really intend to limit foreign direct investment only to the necessity of

export substitution. If true, the next question is how free the Japanese firms are in pursuing this type of investment policy. Most countries' industrial and trade policies may be independent constraints on Japanese firms' action. These countries may demand of Japanese firms more investment capital, management, technology, and input procurement coupled with pressure for export of products to third countries or to Japan. In Japan the last point is called a "boomerang effect" which is equivalent to the concept of "job exports."[1] Unlike the original boomerang which in the hands of Australians captures and brings game back, the "boomerang effect" in Japanese usage has taken on a negative connotation: something sent out by the Japanese returns to harm them. The Federation study of E & E employment shows that there has been no "boomerang effect" on employment due to Japanese foreign direct investment. Table 2 seems to support this proposition.

(Table 2 about here)

Table 2 indicates that in 1979, about 61 percent of the inputs of Japanese E & E firms' overseas plants came from Japan, while about one-third was supplied locally. At the same time, true to the export substitution hypothesis, less than 5 percent of the output of overseas plants was exported to Japan in 1979, while more than 80 percent was marketed locally. When the 1979 figures are compared with earlier figures, the character of export substitution seems to have been intensified. (Although Japan's share in input supply to overseas plants declined somewhat, the host countries' role as the market for their output increased considerably.) Since output and employment in Japanese

overseas plants increased enormously during the same period, the intensified export substitution implies that Japanese employment at home also increased due to the export-induced expansion of input production.

Another fascinating aspect of Japanese foreign direct investment revealed by Table 2 is the relationship between input sourcing and output marketing that varies among geographical regions of the world in which Japanese E & E firms have invested. In Asia, inputs from Japan proportionately declined from 63.4 percent of total in 1974 to 38.7 percent in 1979, while inputs locally supplied increased from 32.7 percent to 58.5 percent. But local markets also absorbed a rising share of output (from 45.5 percent to 58.6 percent), while Japan's share declined from 29.1 percent to 12.0 percent. This seems to imply an increasing indigenization of Japansese overseas plants in Asia in the sense that they are buying proportionately more inputs and selling proportionately more output within their host countries. (However, the increased supply capability of Asian host countries may also have been due to Japanese foreign direct investment in input production. It is generally believed that Japanese firms, at home and abroad, prefer to do business among themselves. When the input demand of Japanese overseas plants reaches a critical mass to justify an input plant, the export substitution hypothesis may dictate that a plant be built to produce and supply the appropriate inputs locally.)

A different pattern emerges for North America in Table 2. Japanese plants in North America are buying proportionately more inputs from Japan and selling proportionately more output in North America. The character of foreign direct investment as export substitution is

becoming purer. To make the story more interesting, (though not shown in Table 2) the Federation study shows that the share of North America in total Japanese E & E foreign direct investment has been rising lately.[2] If the weight shifts from areas of increasing indigenization to increasing export substitution, the overall degree of export substitution for the whole of Japanese foreign direct investment should rise. However, the rise in Japanese direct investment in North America may not have been a calculated move for the purpose of increasing the overall degree of export substitution. It has been in part to appease the North American complaints about imports of Japanese finished products. Nevertheless, it is often heard that the Japanese plants in North America limit their operations to the barest surface of finished products and bring all stages of intermediate inputs from Japan, aided by the North American tariff structures which in effect favor such practices.

It is then reasonably clear that Japanese E & E firms have protected their employees' jobs in Japan by planning and implementing a particular style of foreign direct investment, which has never been predicted by Western theories of direct investment.[3] In general, Japanese firms' foreign direct investment is strictly subordinated to Japan's foreign trade policy, which in turn is an instrument of Japan's industrial policy.[4] The supremacy of industrial policy from which explicit or implicit guidance emanates with respect to foreign trade and investment is certainly something unique to Japan. Japan's industrial policy has consistently demonstrated a high degree of prescience in anticipating

changes in industrial structure commensurate with high rates of economic growth. Foreign trade as an instrument of industrial policy has been assigned the task of securing raw materials for Japan's growing and changing industrial structure and finding the outlet for Japan's industrial products which come out of the priority industries favored by the predominating industrial policy. The principal policy goal is to make the Japanese economic system well-balanced, highly flexible, and capable of producing all desirable things within itself (a "one-set economy" according to Miyohei Shinohara's another felicitous phrase). To a country working for the creation of such an economic system by conscious national design, laissez-faire has never been appealing as a principle of foreign trade. What should be imported or exported must be decided upon within the controlling framework of industrial policy. This approach is not costless in the short run. But Japan has been quite willing to forego potential benefits of free international trade through specialization based on comparative advantage. Rather, "comparative advantage" has been viewed as a dependent variable that can be determined by other national objectives (like an industrial structure Japan should have at any cost) which claim precedence over free trade on the basis of comparative advantages of nations at an arbitrary point in time.

In the framework of structural evolution considered desirable, tangible and intangible favors must go to selected leading industries which take on the features of "national policy industries."[5] These industries, in order to develop fast, must have the benefits of economies of scale which in turn depend on the size of the market. Japan's

domestic market must therefore be reserved or protected for them. By the same logic, together with domestic expansion, these industries' efforts to utilize foreign markets for economies of scale must also be assisted by policy action. In sum, the decision as to which industries to encourage for the purpose of nurturing a desirable industrial structure (industrial policy) determines the shape of trade policy.

This does not mean that all industries with high export capability have been generated and cultivated with the help of industrial policy. Policy always has had to contend with the private market forces which in a capitalist economy have their own laws of motion. In Japan, private entrepreneurship unaided by policy has been vigorous and produced competent industries under the international market forces. The notable example is the textiles. Not so long ago, however, the Japanese textile industry was crippled by the protective policy of other countries and by labor shortage at home.[6] When the Japanese government intervened in the textiles at this juncture, it was for a further weakening of the industry by encouraging it to move out of Japan to less developed countries of Asia! That was because Japan's industrial policy dictated a rapid transition to high-technology, knowledge-intensive industries and because resources had to be preferentially reallocated to these policy industries.

That the textile firms were the first to make extensive foreign direct investment in Asian countries with the blessings of the Japanese government is symbolic of Japan's foreign direct investment policy. Foreign direct investment is an instrument to transfer unwanted or low-priority industries to other countries. It is as if Japan had a schedule of desirability in which various industries are properly weighted

and ranked and followed it from the lowest end up to some cutting-off point to determine which industries or products should be pushed out via foreign direct investment. The emphasis on less developed countries as hosts for Japanese investment fitted this policy very well. The activities in which Japan invested had to be those which less skilled managers and workers of less developed countries could handle. This meant that the industries which were the perfect candidates for transfer were those which were losing out in Japan under the impact of technological sophistication and social change. Foreign direct investment of this type also made perfect sense from the market-protection point of view, because if the Japanese did not start these industries in less developed countries, indigenous entrepreneurs would in due course rise to take advantage of the relatively easier entry requirements. (Although Japanese-style foreign direct investment hitherto narrated implies serious questions as to its costs and benefits to the host country, these do not concern this paper for the moment.)

The foreign direct investment by Japanese E & E firms which even the trade unions almost gratefully acknowledge as export substitution, not job exports, is consistent with the whole syndrome of Japanese industrial policy, trade policy, and investment policy. Japan so far has enjoyed an amazing degree of freedom in formulating and executing a wide range of policies even in areas of action that affect the interests of other countries partly because other countries have been less skilled in the art of national economic policy-making and less consistent or tenacious in sticking with adopted courses of action. Japan has also

been fortunate in being overlooked by other countries as a source of pressure that seriously limits or distorts the choices for them. In other words, Japan has been a powerful determinant for the life chances of many nations and yet the world has been blissfully ignorant of what Japan has been doing. The Japanese usually complain that foreigners do not understand them but wisely leave unstated how much they are benefitting from the world's ignorance of and indifference to Japan.

Footnotes

[1]The phrase was coined by Professor Miyohei Shinohara. In his recent book, he uses the concept almost as an alias of latecomers' "catching up" with advanced countries as seen from the perspective of the latter. See M. Shinohara, Keizai taikoku no seisui (The rise and fall of economic powers) (Tokyo: Tōyō Keizai Shinpōsha, 1982).

[2]Denki Rōren (Federation of the Unions of Electrical and Electronic Workers), Denki sangyō no chūkiteki koyō tenbō (Intermediate-term perspective on employment in the electrical and electronic industry) (Tokyo, 1981), p. 31.

[3]Theories of Japanese foreign direct investment have been advanced by Professor Kiyoshi Kojima in Japan and by Professor Terutomo Ozawa in the United States. See K. Kojima, Kaigai chokusetsu tōshiron (Overseas direct investment) (Tokyo: Diamond Publishing Co., 1977) and T. Ozawa, Multinationalism, Japanese Style (Princeton, New Jersey: Princeton University Press, 1979).

[4]The simplified hierarchy of policies emerge from numerous discussions of the three subject matters involved here. See, in addition to the works of Kojima and Ozawa, Michael Blaker, ed., The Politics of Trade: U.S. and Japanese Policymaking for the GATT Negotiations (New York: Columbia University, 1978), and Hiroya Ueno, "The Conception and Evaluation of Japanese Industrial Policy," in Kazuo Sato, ed., Industry and Business in Japan (New York: M. E. Sharpe, 1980), Chapter 10.

[5]An expression in imitation of Chalmers Johnson, Japan's Public Policy Companies (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1978).

[6]I. M. Destler, Haruhiro Fukui, and Hideo Sato, The Textile Wrangle: Conflict in Japanese-American Relations, 1969-1971, (Ithaca, New York: Cornell University Press, 1979).

Table 1

Japan's international trade in electric and electronic commodities: imports by source (more developed or less developed countries) and by commodity group as percent of exports, for selected years, 1970-78

	1970	1972	1974	1976	1978
Total (72)[1]					
1. Imports/exports	.194	.129	.187	.122 ('77)	.123
2. Imports from MDCs/exports	.182	.114	.148	.089 ('77)	.101
3. Imports from LDCs/exports	.012	.015	.039	.033 ('77)	.022
Electric power and switch gear (722) and equipment for distributing electricity (723)					
1. Imports/exports	.191 ('71)	.180	.199	.187	.158
2. Imports from MDCs/exports	.179 ('71)	.163	.151	.122	.133
3. Imports from LDCs/exports	.012 ('71)	.017	.048	.065	.025
Domestic electrical equipment (725)					
1. Imports/exports	.100	.105	.224	.148	.087
2. Imports from MDCs/exports	.099	.101	.212	.136	.070
3. Imports from LDCs/exports	.001	.004	.012	.012	.017
Electric apparatus for medical purposes, radiological apparatus (726)					
1. Imports/exports	.877	.564	.644	.630 ('76)	.833
2. Imports from MDCs/exports	.877	.563	.641	.621 ('76)	.827
3. Imports from LDCs/exports	0	.001	.003	.009 ('76)	.006
Television broadcast receivers (7241) and radio broadcast receivers (7242)					
1. Imports/exports	.002	.004	.013	.018	.010
2. Imports from MDCs/exports	0	0	0	0	0
3. Imports from LDCs/exports	.002	.004	.013	.018	.010
Telecommunications equipment (7249)					
1. Imports/exports	.121 ('69)	.101	.132	.063	.093
2. Imports from MDCs/exports	.117 ('69)	.092	.114	.045	.076
3. Imports from LDCs/exports	.004	.020	.018	.018	.017

Table 1 (continued)

Electrical line telephone and telegraph equipments (72491)					
1. Imports/exports	.043 ('69)	.043	.068	.063 ('75)	NA
2. Imports from MDCs/exports	.040 ('69)	.040	.061	.055 ('75)	NA
3. Imports from LDCs/exports	.003 ('69)	.003	.007	.008 ('75)	NA
Microphones, loudspeakers and amplifiers (72491)					
1. Imports/exports	.030 ('71)	.036	.119	.135 ('75)	NA
2. Imports from MDCs/exports	.027 ('71)	.028	.087	.100 ('75)	NA
3. Imports from LDCs/exports	.003 ('71)	.008	.031	.035 ('75)	NA
Other electric machinery and appartus (729) and everything not mentioned elsewhere					
1. Imports/exports	.653	.330	.383	.410	.141
2. Imports from MDCs/exports	.604	.291	.310	.296	.107
3. Imports from LDCs/exports	.049	.039	.073	.114	.034

Sources: O. E. C. D., Statistics of Foreign Trade: Trade by Commodities (Paris).

Notes

[1]Numbers in the parentheses are the commodity classes used in the O. E. C. D. commodity classification. The overall category is two-digit 72, which then is broken down into two-, three-, or more-digit levels. The commodity groups presented here are selected to correspond to industry groups used in Japanese employment data presented later in this paper. However, the correspondence is not perfect. It appears that some change in classification occurred in and after 1976 with respect to telecommunications equipment (7249) whose sub-classes (72491 and 72492) have since disappeared.

Table 2

Input procurement by source and output marketing by destination as percent of total by geographical area for Japanese overseas subsidiaries and affiliates, 1974 and 1979

Area	Procured from:	1974	1979	Sold to:	1974	1979
	Host country	33.2	33.6	Host country	55.4	81.2
	Third country	3.7	5.8	Third country	21.8	14.0
All areas	Japan	62.9	60.6	Japan	22.8	4.8
	Total	99.8	100.0	Total	100.0	100.0
	Host country	32.7	58.5	Host country	45.5	58.6
	Third country	3.7	2.9	Third country	25.2	29.4
Asia	Japan	63.4	38.7	Japan	29.1	12.0
	Total	99.8	100.1	Total	99.8	100.0
	Host country	48.5	13.8	Host country	90.6	98.9
	Third country	--	10.1	Third country	1.3	0.9
North America	Japan	51.4	76.1	Japan	8.0	0.2
	Total	99.9	100.0	Total	99.9	100.0

Sources: Denki Roren (Federation of the Unions of Electrical and Electronic Workers), Denki sangyo no chukiteki koyo tenbo (Intermediate-term perspective on employment in electrical and electronic industries) (Tokyo, 1981), p. 34.

The Ultimate Employment Guarantee: Marketing, Product, and Process Innovations

There are two sources of instability that affect the employment security of the work force in any firm. One is the cyclical instability of the aggregate demand. The other is the completion of a product life cycle without a new product to take its place.

When the aggregate demand slackens and the sales decline over the whole range of products, Japanese firms intensify marketing efforts, often producing considerable innovations in sales techniques, market organization, cultivation of the consumer taste, etc. Since laying off workers or idling the plant cannot be easily resorted to, Japanese firms also intensify efforts to "rationalize" the production process to cut costs and lower prices. It appears that Japanese firms are less willing to resign to the dictates of the aggregate demand than firms in other countries. The latter are accustomed to cyclical fluctuations and do not resist resorting to layoffs or plant idling. In Japan, firms display a sort of provincial stubbornness in refusing to acquiesce with the general trend of the economy. They seem to feel that in business there is only one way to go--up--regardless of the general economic conditions. Since each firm behaves this way, all the firms in the aggregate succeed in preventing the cycles from taking place or minimizing their scales.

Employment adjustment due to the expiration of a product life cycle requires a fine tuning with the rise of another product. Firms with diversified products with wide-ranging R & D have the best chance to cope with problems due to product life cycles. This may be at the

root of the Japanese propensity to make a firm into a "comprehensive maker" or to form a group with other firms producing different things. The well-remembered "depression" that engulfed home appliances and consumer durables in 1965 was the result of dying product life cycles aggravated by a decline in the aggregate demand. The boom in home appliances and durables which started in 1955 ran out of its course in the early 1960s. The diffusion rates of major durables among Japanese households were pressing toward saturation points (in 1963, 89% for black and white TV, 82% for radio, 66% for washing machine, etc.). The "depression" induced extensive turnovers of managerial and executive personnel and considerable workforce redundancies which were managed through job transfers and temporary Japanese-style layoffs. The wholesale and retail chains were reorganized largely due to the wholesalers' and retailers' revolts against the grips of the manufacturers. Fortunately, exports continued to increase unabated for Japanese-made E & E articles. And a new product life cycle was on the rise just when the previous boom had died. That was color TV. New products and new generations of established products rode with color TV into a new boom. This new boom in home E & E appliances was aided by the renewal of rapid economic growth from 1965 to the OPEC shock of 1973, though with minor disturbances due to the Nixon shock of 1971 and the subsequent exchange rate realignment and floating. Although the domestic markets tapered off after 1973, the unusual strength of the markets abroad for these goods continued to support the growth of the Japanese E & E industry. Product innovations have also been stimulated by the strength of the foreign markets. For example, the rapid growth of VTRs (videotape recorders) owes very much to the foreign markets.

In addition to marketing and product innovations, there is another kind of innovation which according to some observers, is uniquely Japanese; i.e., process innovation. This refers to the aggregate effect of numerous small efforts by workers on the shop floor to improve the efficiency of production and the quality of products. The willingness of the individual Japanese workers to take the initiative in introducing measures for process improvements is widely-known. This is part of their eagerness to learn and master any kind of production process in the interest of maximizing the overall productivity of the firm. Economists summarize the effects of such worker efforts on productivity by the concept of "learning curve" proxied by the curve of working time per unit of output over time. For a given technology for a given product (e.g., assembly lines for TV production common to Japan and other countries), the Japanese are said to show a steeper "learning curve" than workers in other countries. Thus, for the same product with the same technology, a given investment that can be profitable in Japan may not be profitable elsewhere. The end result is the triumph of Japanese manufacturing in international competition.

Lester C. Thurow of M.I.T. is foremost in emphasizing the importance of process innovation as a major source of rising productivity. His theory of the "learning curve" is consciously based on his understanding of Japanese experience. A few passages from one of his books may illustrate the factors involved in realizing a steep "learning curve."[1] "The learning curve is related to the process of informal, on-the-job acquisition of skills and team productivity. In the process of production workers learn and improve their individual job skills

and learn to work together as a team." "But the process [of learning] is not automatic. It depends upon high quality management and a co-operative work force." "Starting a class war is hardly the way to proceed." And speaking of the incentives for performance built into the Japanese employment system, Thurow observes:[2]

> With lifetime employment and seniority wages, technical progress is not threatening...[to] either employment or wages. With the typical worker getting about 50 percent of his or her wages in twice yearly bonuses that depend upon profits, a steep learning curve is of direct concern to each worker. Every worker has an incentive to maximize productivity by welcoming technical change, learning new skills, and contributing to industrial team work...

Thurow does not think that the relationship between the types of incentives and industrial relations in Japan is culture-specific. "Faced with the same incentives, U.S. workers would respond in the same way," he concludes. However, some students in the College of Engineering at the University of Illinois who were exposed to the Lester book as a part of their instructional materials expressed doubts about the applicability of the Japanese style incentives to American workers. On "lifetime employment," they invariably ask: "how can you make people work without a constant threat of layoff for poor performance? You only encourage workers to goof off by guaranteeing employment." With respect to bonuses based on results, they suspect that workers' share is often unfairly calculated and that it is better to contract a fixed rate of pay so it cannot be cut back regardless of company profits. They also like "rigid work rules" (which prevent process innovations) by demanding that they should know <u>exactly</u> what is expected of them. In effect, American workers prefer to be mere

automatons in the process of production, each knowing exactly what to do, but no more or no less. The reactions of the students indicate that the most important ingredient of the Japanese employment system is apparently lacking in the American employment relationship: a high degree of trust between workers and managers. By comparison with the American-style labor-management relations, it almost appears as if workers and managers in Japan were indistinguishable "citizens" of the firm with equal rights to participate in its governance.

Finally, in listening to Japanese managers and workers for their views of production and employment, one is struck with the strategic role of nationalism in binding all Japanese together. At the level of the firm, the clearest battle line is not between us, workers and them, company, but us, Japanese against them, Americans, Asians, Europeans, etc. Within the firm, executives, managers, and workers are equally worried about their firm's competitiveness in relation to, say, American firms. Because of the imperative of having to win at this competition, the Japanese cannot afford the luxury of prolonged conflict between management and labor, some say. It appears then that all employees of a Japanese firm, regardless of their levels in the organization, consider the survival and prosperity of the firm a direct component of the larger National Interest. Everyone is apparently ready any time to suffer a fair share of sacrifice, if necessary, in the name of Japan's national interest in a world which the Japanese generally view as basically unfriendly or even hostile to Japan. The feeling of loneliness at the international level pulls the Japanese together and drives them into self defense by building an impregnable

industrial garrison in the Japanese islands. From a different viewpoint, the intense nationalism recalls a not-so-forgotten image of Japanese fascism. Fortunately, however, there seems to be enough desire among the Japanese for "internationalization" to put the fear of untoward consequences of Japanese nationalism to rest for ever.

Footnotes

[1]Lester C. Thurow, The Zero-Sum Society (Penguin Books, 1980), pp. 82-84.

[2]Ibid., p. 84.

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