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Japan's High Economic Growth and Labor

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NEXT ISSUE (Autumn 2014)
The autumn 2014 issue of the Review will be a special edition devoted to **Family Formation and Labor**.

Introduction

Japan's High Economic Growth and Labor

During Japan's postwar period of high economic growth between 1955 and 1973, the GDP grew at an average rate of approximately 10% per year. In what manner did labor drive this economic miracle? In this special feature, we analyze the relationship between high economic growth and labor in Japan from a variety of angles, and examine salient characteristics of the country's employment practices and labor-management relations.

The economic analysis in Yasuhiro Ueshima's *High Economic Growth and Human Capital* concludes that periods of high economic growth are ones in which human capital accumulates at a rapid rate. Ueshima notes that during the growth period described above, high school attendance rates grew and human capital was amassed through companies' in-house training programs. Also, as the labor market went from being oversaturated to under-supplied, there was particularly robust growth in demand for less skilled labor, and wage distribution shrank almost consistently throughout the period, bringing about a "hundred-million middle class" (i.e., virtually all Japanese are middle class) mentality. For nearly half a century starting in the 1950s, education in schools and in-house training at companies were key channels for human resource development. Schools boosted the quality of the labor force while technological innovations revolutionized manufacturing, both contributing to economic growth. Meanwhile, companies' in-house training programs can be seen as responsible for around half of the accumulation of skills by male workers, but female workers were largely excluded from the general training in which skills were acquired. For this reason, human capital accumulation among female and non-regular workers has emerged as a vital issue.

Japan's Period of High Economic Growth and Science and Technology Education by Akihiro Itoh clarifies the systems and processes by which higher education institutions supplied technical personnel who contributed to high economic growth. Between 1955 and 1975 the number of science and technology students nearly quintupled, and the bulk of this growth was the result of three governmental plans to boost student capacity in these fields, which are referred to as "the 8,000-Student Plan," "the 20,000-Student Plan" and "the Rapid Increase Plan." The first two of these were essentially a part of Japan's manpower strategy aimed at achieving economic growth. However, even amid favorable economic conditions the implementation of these plans did not progress smoothly, and the government was forced to provide massive financial support for these institutions in exchange for cooperation with the plans. The government formulated these strategies for reinforcement of science and technology in response to demands from the industrial sector, but the bulk of growth in science and technology capacity took place at private universities. Amid consistently strong demand for human resources throughout the high economic growth period, demand for engineers was particularly high during the 1960s, and the government strategies

for reinforcement of science and technology fed this demand. In the 1970s, however, the technical job market grew oversaturated, and graduates branched out into other fields. What this research makes clear is that cultivation of engineers at educational institutions was not a factor driving Japan's economic growth, but in fact a consequence of this growth.

Chiaki Moriguchi's *Japanese-Style Human Resource Management and Its Historical Origins* clarifies the ways in which Japanese companies have resolved contractual hold-up problems by coming to implicit agreements with regular employees, and by developing human resources policies such as internal promotion systems and joint labor-management consultations. The core of the Japanese model, which is without parallel in the West, is a promise of human capital investment and job security for regular employees, not only white-collar workers but blue-collar ones as well, in exchange for the workers' dedication and skill, which leads to high productivity. However, this "exchange" is not a legally binding employment contract but merely an implicit agreement, and a set of complementary human resources policies, such as an internal promotion system and joint labor-management consultations, must be implemented before a condition of self-enforcing equilibrium is achieved. It was during the high economic growth period that seven of these key human resources policies were all in effect and complemented one another, and there was a condition of stable equilibrium. This Japanese-style human resource management model brought Japanese society both affluence and equality, which coexisted to a rare degree, but at the same time it had both positive and negative aspects, which have significant implications for present-day Japan as well.

Moriguchi's paper points out that one key aspect of Japanese-style employment practices is enterprise unions (as opposed to independent trade unions), which helped build mutual trust between labor and management. Meanwhile, Sumiko Ebisuno's *Labor-Management Relations during High Economic Growth* examines Japanese-style labor-management relations from a macro perspective, analyzing and outlining the role that productivity campaigns and annual wage negotiations played in these relations. The roots of Japan's labor-management relations during the high economic growth period lie in "The Three Guiding Principles of the Productivity Movement" set forth by the Japan Productivity Center, established in 1955. The Japanese economy had recovered to the level where the country was "no longer in the postwar period," and there was a need for general public recognition that the key to further growth lay in modernization. Corporations and workers, which had thus far clashed fiercely, shifted toward formation of a more cooperative relationship, aiming to work together for improved productivity and share the outcomes of these efforts equally among labor and management. The annual spring labor negotiation system gained prevalence as a means of ensuring the fruits of economic growth were distributed among workers. These labor-management relations mechanisms, developed during the era of high economic growth, continue to form the basis of labor-management relations today, but it has been noted that there is a pressing need to reexamine labor-management relations in the context of today's evolving economic and social climate.

High Economic Growth and Labor Law by Makoto Ishida examines the process by which Japan's labor law was formed during the high economic growth period, and the law's relation to formation and propagation of Japanese-style employment practices. According to Ishida, the relationship between economic growth as a social phenomenon and the law as a set of standards has two aspects—the "construction of law by society" and the "construction of society by law"—that reciprocally complement one another. From this theoretical vantage point, Ishida clarifies this reciprocally complementary relationship by examining judicial precedents and doctrines from the period. As a result, (i) in terms of the construction of law by society, principles of case law at that time acknowledged the reality of the Japanese-style employment system, and expressed it in the form of fixed rules (norms). On the other hand, (ii) in terms of the construction of society by law, principles of case law expressed in that way became a force giving the impression that the "Japanese-style employment system" was a universal system in Japan, although in reality it was merely one part of Japan's employment system.

Taken all together, these papers paint a picture of Japan's high economic growth period in which the nation's education system, human resources management systems, labor-management relations, legal system and so forth functioned in a complementary manner, serving to forge the Japanese-style employment system and propel Japan's economic growth. These observations have much to teach us about the importance of accurately recognizing social and economic circumstances and changes, and shaping the systems that make up our society in line with this recognition. Today, with the bedrock of our society and economy shifting drastically, how are we to reform the characteristically Japanese systems that have prevailed thus far? This special feature provides various perspectives based on historical and social analysis, from which we can examine the serious issues that Japan faces today.

Yuichiro Mizumachi
The University of Tokyo

High Economic Growth and Human Capital: Conditions for Sustained Growth

Yasuhiro Ueshima
Konan University

This paper explains changes in wage structure during and following the era of high economic growth from the perspectives of both supply and demand, and evaluates the impact of human capital formation on the Japanese economy. An attempt is also made to clarify to what extent and in what form various channels of human capital formation contributed to economic growth. First, school education continued to be an effective investment despite the spread of higher education, and gradually grew in importance as a channel that raised the quality of the labor force. The reason for this is that changes in technology were biased toward certain academic backgrounds. Academic skills raised productivity in tandem with new technologies and thereby contributed to economic growth. Next, in-house training maintained its usefulness amongst male workers despite the aging of the labor force, and accounted for about half of all the accumulation of skills. On the other hand, female workers were excluded from the general training that aimed to foster work skills with wide applicability. Finally, faced with today's trends toward "non-regular" work and "impoverishment," ideas on how to maintain mechanisms for broad human capital formation will be discussed.

I. Introduction

Living standards in Japan improved dramatically over the space of about two decades starting with the "Jimmu boom" (an economic boom in the mid-1950s, named after the legendary "first human emperor" of Japan). Though the pace of growth cooled with the imposition of the "Dodge Line" (a financial policy designed to give Japan economic independence after World War II), special procurement for the Korean War breathed new life into the Japanese economy. Led by four top priority industries including electric power and steel, companies introduced state-of-the-art equipment in a torrent, causing year-on-year growth in equipment investments to rise from 37.9% in 1956 to 44.4% in 1960. Capital stock increased 1.6-fold in manufacturing industries as a whole between 1955 and 1960, with a 2.0-fold rise in chemicals, 2.2-fold rise in general machinery, 2.8-fold rise in metals and 2.9-fold rise in electrical machinery. This was the start of high growth that continued until the oil crises, based on the "first rocket" of investment in technological innovation.[1]

* Professors Takenori Inoki, Kojiro Sakurai, Takuji Funaba, Corinne Boyles, Noel Gaston, Stuart Rosewarne and the members of Political Economy, Sydney University gave advice and assistance in the preparation of this paper. The author would like to take this opportunity to express his thanks to them.

[1] On the content of technical innovation, see Inoki (1989), Yamaguchi et al. (1994), Takamura and Koyama (1994), and others.

The new production technology led to a shift in labor demand. To achieve mass production, manpower was gradually replaced by machinery, equipment and devices, whether for simple work and heavy physical labor, or for the honed skills of craftmen. A side effect of this was that workers on site were now expected to have the ability to make judgments and to respond to change as well as any problems arising in operations. As the mechanisms of machinery and devices gradually became more sophisticated, so the workers came to need a basic knowledge of physics, chemistry, electricity and programming. They also had to devise improvements to prevent problems from occurring, based on an overall grasp of the production process. In responding to technological change, companies would hire trainable young workers and let them acquire skills by experiencing a broad range of work operations in the workplace (Koike 1976, 1997; Yamamoto 1994; Ueshima, Funaba, and Inoki 2006).

With rapidly advancing industrialization, manufacturing industries absorbed surplus rural manpower as factory workers in urban areas, creating a broad mechanism for human capital formation among male workers. And while the number of workers employed in agriculture, forestry and fisheries declined from 16.80 million in 1950 to 12.34 million in 1965, those employed in manufacturing increased more rapidly from 7.47 million to 12.52 million in the same period (Economic and Social Research Institute, Cabinet Office 2001). Factory workers were given in-house training, even in many small and medium-sized companies.[2] Through a combination of human and physical investment, the labor productivity of manufacturing industries rose from its set value of 100 in 1955 to 130 in 1960 and 195 in 1964. The first half of the high economic growth era thus ended with an average economic growth rate of 9.4% between 1956 and 1964.

Many contemporary observers saw the recession of 1965 as the end of high economic growth. But then personal consumption grew by more than 10% in both 1966 and 1967. The diffusion rate of washing machines and refrigerators in rural areas was still only about half that of the cities, while color TVs started selling well to replace monochrome sets in the second half of the 1960s, and sales of private automobiles also started to take off. In 1967 and 1968, housing investments increased by nearly 20% year-on-year. The thriving state of downstream industries also enriched the upstream ones. As a result, capital equipment investments rebounded from negative growth in 1965 to take a new leap forward.

In the first half of the 1960s, social equality was achieved on the back of human capital formation. As suggested by the phrase “the hundred-million middle class,” the proportion of survey respondents describing their own living standards as “low” or “lower middle” decreased, while conversely the proportion of those describing them as “middling middle” increased from 37% to 42%, then 50% and later 53% over three-yearly periods from 1958, a quite unprecedented rate of increase (Nakamura 1993, 521). This equalization of incomes

[2] Odaka (1993, chap. 4) states that more than 80% of establishments were already implementing systematic training for new graduates in 1969, and describes a number of case studies on workplace training.

brought about massive consumption and housing investment, causing high economic growth to continue for another ten years. In the second half from 1965 to 1973, the average growth rate was 9.5%, on a par with that of the first half.[3]

Investment in human capital formation was the "second rocket" for sustained growth. In-house training allowed workers to accumulate the practical knowledge and experience they needed for their daily work. Some of the acquired skills were specific to the companies they were working for, and to make use of these, the workers were internalized—that is, even in slight economic upturns they stayed in the same job, and even in slight downturns they were not dismissed. Meanwhile, the system of internal promotion gave workers incentives to acquire further skills, while guidance and evaluation by superiors was more appropriate. The systems of skill enhancement, long-term employment and internal promotion led to expectations of stable incomes into the future. These expectations prevailed, giving rise to the powerful consumption and housing investment on the demand side for goods and services.

On the supply side, meanwhile, human capital formation led not only to greater production efficiency but also to the introduction and improvement of new technologies, the development and manufacture of new products, and harmonious labor relations. Thanks to these, Japanese companies raised their labor productivity and acquired strong international competitiveness in the 1970s. Furthermore, the school enrollment rate also rose, thus contributing to human resource investment in the next generation as well. Without a broad mechanism for human capital formation, high economic growth would not have been sustained, and there would have been no stable growth after the oil crises.

This paper will explain trends in wage differentials in terms of both supply and demand, and will evaluate the impact of human capital formation on economic growth. Wage differentials signal a scarcity of skills, and so indicate how effective each investment is. Here, the author will derive important features concerning human capital formation from trends in differentials over about half a century, and using these as pointers, will consider how today's situation should be improved.

The composition is as follows. Section II will show how the wage distribution as a whole shrank. It will also explain how and why various wage differentials changed. Section III will reveal how channels of human capital formation changed in terms of the labor quality. It will also clarify to what degree and in what form these contributed to economic growth. And in Section IV, the author will posit measures for improving the current situation, based on the results of the above analysis.

[3] Yoshikawa (1997) vividly depicts how lifestyles and society were transformed by the diffusion of consumer durables, technological innovation and population drift.

II. Wages and Labor Force Composition

In this Section, it will first be shown that the wage distribution shrank more or less consistently from 1954 onwards. Next, various trends in wage differentials will be examined and the reasons for them explained. In particular, the aim will be to show clearly what forms of investment were effective. For the era of high economic growth, the main target will be manufacturing industries where data sources are most complete. For the period since 1982, it will be confirmed that the same trends held true for nine major industries including service industries and others (referred to below as "all industries").[4]

The data to be used are the age tables and the age by length of service cross tables recorded in the *Basic Survey on Wage Structure* (each year's edition). For example, "MA1" in a figure indicates a series that pools age table categories in manufacturing industries for the three years 1958, 1961 and 1964. "EC" indicates a series that pools cross tables in all industries for 1982, 1987, 1990, 1992, 1997, 2000 and 2002. The target years and number of divisions for each year are given in the Appendix.

1. Variance in Log Wage Distribution

Figure 1 shows the variance in log wage for each year, with the workers' attribute distribution (referred to below as worker distribution) fixed. Because dispersion in wages is larger in higher age groups, the ordinary variance becomes larger as a result of workforce aging. Therefore, the variance has to be calculated with the worker distribution fixed.[5]

According to the figure, the wage distribution shrank for nearly half a century. The variance in manufacturing industries calculated from the age tables was more or less the same in 1954 and 1958 (0.326 and 0.323, marked by ○), falling slightly to 0.299 in 1961.[6] Then, in the first half of the 1960s, the wage distribution shrank dramatically (△). The variance calculated in the cross table was halved from 0.347 in 1961 to 0.163 in 1976 (■), and the distribution continued to shrink slowly thereafter (□). From the 1980s onwards, variance in all industries, like that in manufacturing industries, decreased from 0.156 in 1982 to 0.125 in 2002 (＋).

It is interesting that the wage distribution shrank irrespective of whether the economy

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[4] See Mitani (2003) for a study of wide-ranging changes in the postwar labor market.

[5] In the figure, worker distribution is fixed at the period-based average for each series $\{\overline{n}_i.\}_{i=1\ldots I}$, and the variance in the logarithm of monthly contractual earnings in each year $\sum_{i=1}^{I}\overline{n}_i.(\log w_{it}-\overline{\log w}_{.t})^2$, $\overline{\log w}_{.t}\equiv\sum_{i=1}^{I}\overline{n}_i.\log w_{it}$ is calculated. However, the worker distribution for 1961 was used in the ● series, and the average for 1958 and 1961 in the ○ series. In addition, the scheduled earnings were used instead of contractual earnings in the □ and ＋ series. The number of cells used for calculation is as indicated in the figure.

[6] The pre-1954 variance is not known, but according to the Labour Statistics Research Division of the Minister of Labour's Secretariat (1968, 182–88), wage differentials based on age and on length of service widened in the years 1948 (1949)–1954.

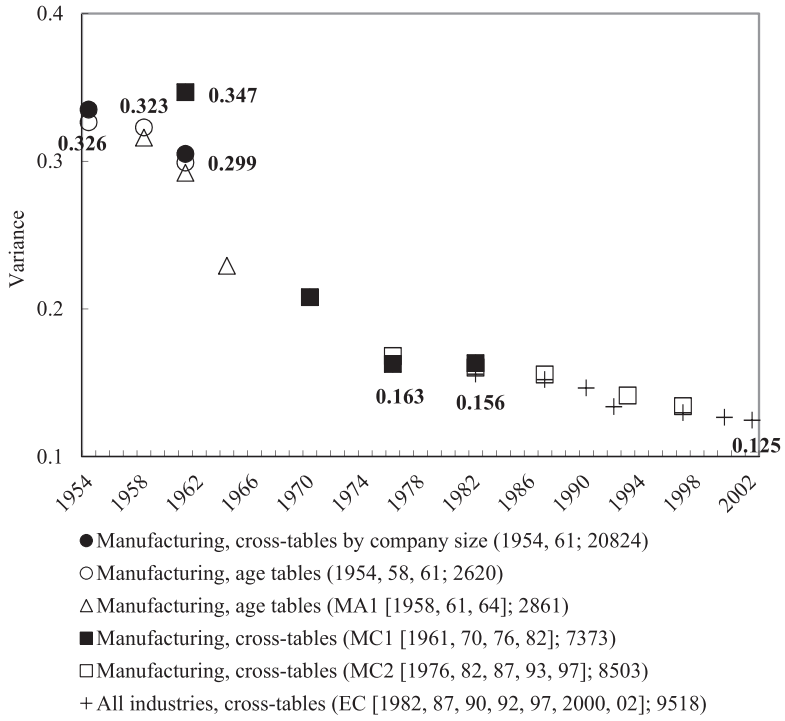

Figure 1. Trends in Log Wage Variance (Worker Distribution Fixed)

was booming or in recession. The reasons for this are likely to be a demand shift to lower skills due to technological change, and an oversupply of high skills due to aging. Even in the short term, the wages of low-skilled workers rose in boom times as part of the competition for new graduates, while conversely, the rise in wages of internalized high-skilled workers would have been relatively suppressed in times of recession.

Equalization in the era of high economic growth had two characteristics. The first was that the wage distribution turned from expansion to shrinkage, and the second is that the speed of this shrinkage was prodigious. The former came about after surplus manpower in rural areas was absorbed as commercial and industrial manpower into urban areas and eventually the state of supply and demand shifted from surplus to shortage (Minami 1970). The latter, in the phase of shortage, resulted from a particular increase in demand for low-skilled workers unfamiliar with traditional technology due to technological innovation (Ueshima 2003).

2. Wage Differentials

While wages in general became equalized, what trends were seen in the various wage differentials? First, as signals indicating scarcity of skills, the focus will be on differentials based on age, length of service, and educational background, respectively, and trends in

these will be explained in terms of shifts in supply and demand. Next, differentials based on company size and industry will be mentioned in terms of structural bias in distribution. Here, "wage differentials" is taken to mean the difference between estimated coefficient values when the logarithm of the hourly wage is regressed on dummy variables for industry, (company size,) educational background, age, length of service, etc., for each of male blue collar workers, female blue collar workers, male white collar workers and female white collar workers.

(1) Wage Differentials Based on Age and Length of Service

"In-house training" refers to a process whereby workers acquire skills through daily work and occasional off-the-job training. Whether or not they perceive it as "training" is irrelevant. Training also includes informal learning conducted independently by the worker without any feedback from an instructor. Conceptually, the skills acquired are divided into general skills that can be used in any company, and specific skills that can only be used in the company currently employing the worker. The process of acquiring the former is called general training, that of acquiring the latter specific training.

The usefulness of these two types of training can be measured by estimating wage functions. In this estimation, the dependent variable is the log wage, while both age and length of service are controlled as independent variables. Generally, when companies minimize their personnel costs, the ratios of marginal productivity (referred to below as "productivity") between workers are equal to wage ratios. Therefore, the coefficient of age in the wage function expresses the rate of productivity increase due to general training, and the coefficient of length of service the rate of increase due to special training. The sum of both coefficients will express the rate of productivity increase in current companies due to training as a whole.[7]

Figure 2 plots trends in the differentials based on age. As is immediately evident, for males, the usefulness of general training decreased massively until 1976 after peaking in 1961. For white collar workers, wages in ages 40–49 were 2.05 times those in ages 20–24 (=exp(0.72)), but this multiple decreased to 1.63 times (□). For blue collar workers, similarly, the multiple decreased from 1.52 times to 1.35 times (■). It appears that some of existing general skills were no longer of use, owing to rapid and comprehensive technological progress. Between the second half of the 1970s and the collapse of the "bubble economy," the number of middle- and higher-aged workers increased dramatically (Figure 3). Wage differentials expanded nonetheless, and general training recovered its usefulness. This was

[7] By definition, the effects of general training can be understood as the impact of years of prior experience X_p on productivity in the current company. As will be seen if $X=X_p + T$ is substituted in the wage function $f(X, T)$ using age X and length of service T as variables, the effect of general training (the partial derivative with respect to X_p) coincides with the partial derivative f_1, and the effect of specific training coincides with the partial derivative f_2 (the effect of both types of training minus that of general training).

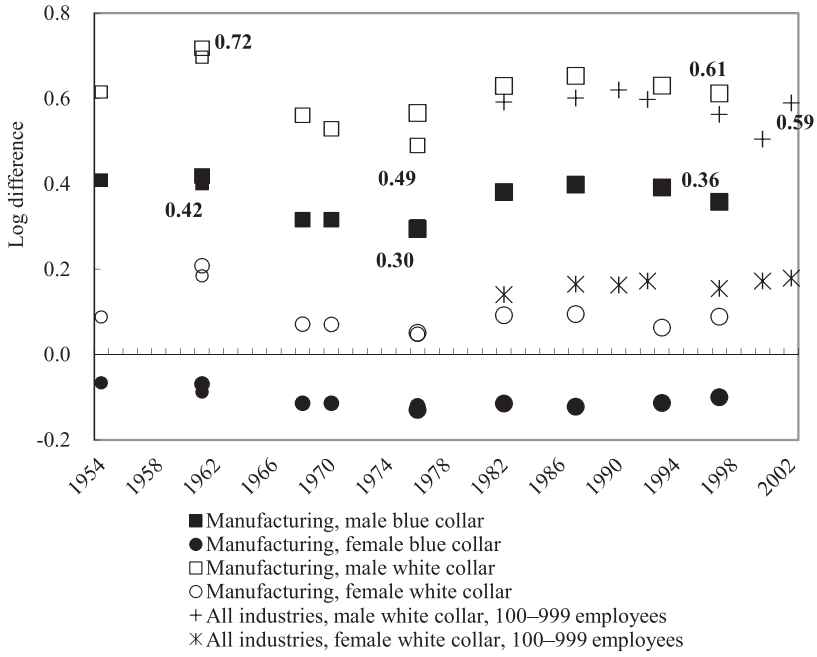

Figure 2. Wage Differentials by Age Groups (MC54, MC1, MC2, EC): 40–49 / 20–24 (–1976), 45–49 / 20–24 (1976–)

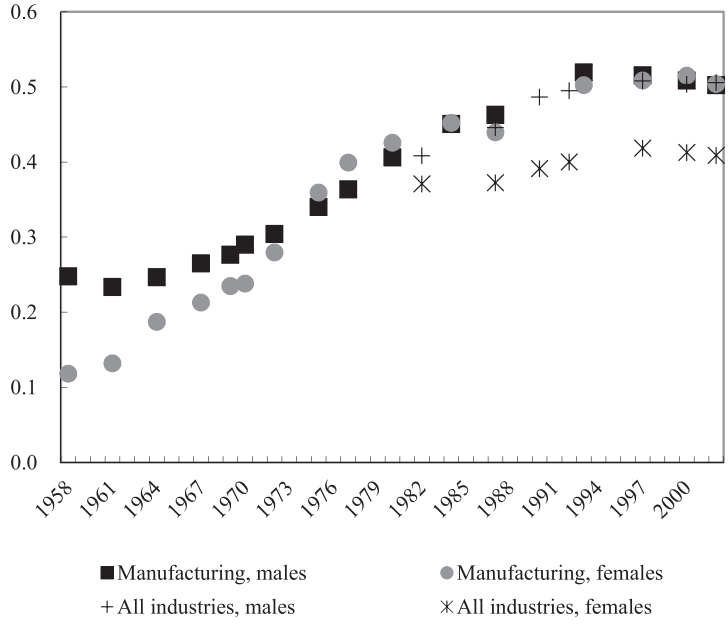

Figure 3. Proportion of Workers Aged 40 or Over (By Gender, Occupation Totals, MA1, MA2, MA3, EC)

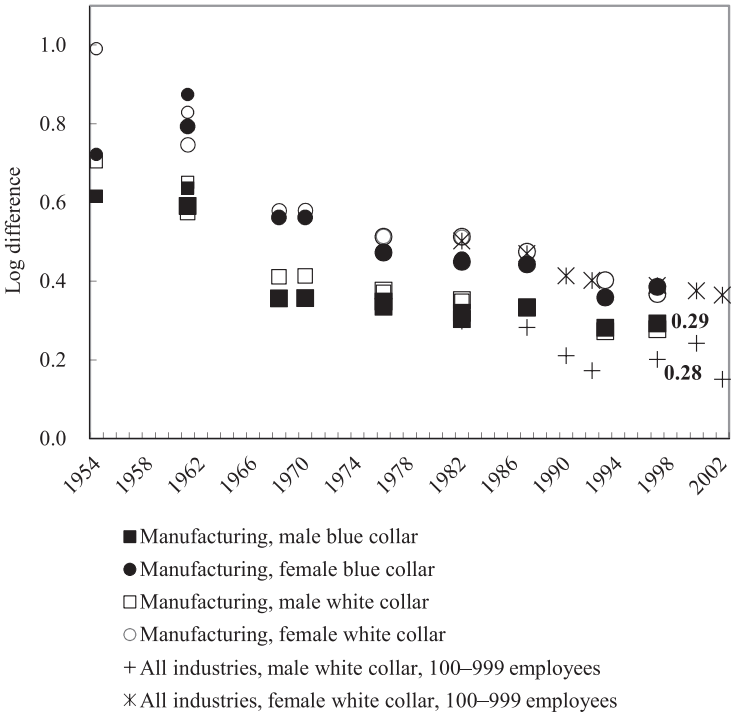

Figure 4. Wage Differentials by Length of Service (MC54, MC1, MC2, EC): 20 Years or More / 1 year (Manufacturing, up to 1961), 20–29 Years / 1–2 years (Manufacturing, 1961 and Later), 20–24 Years / 1–2 Years (All Industries)

not limited to manufacturing industries; levels and trends of differentials were the same among white collar workers in all industries for companies with 100–999 employees (＋).

On the other hand, no accumulation of general skills can be seen among females. For blue collar workers, particularly, wages tended to be lower for those in higher age groups (●). For a long time, it was rare for women to be targeted for training, and the reality was that they would repeat simple tasks of a limited nature after joining a company. Although the work content would change with a job transfer, they were either paid the same as new employees or even lower, since they had not accumulated broad-ranging skills. This was because there was no prospect, for the company, of recouping benefits from training, as females had a statistically high rate of leaving jobs for marriage and childbirth. This would explain why they were excluded from opportunities for general training. The same could also be said of white collar workers in all industries for companies with 100–999 employees (＊).

Trends in the wage differential based on length of service differ from those based on age. As is clear from Figure 4, this gap fell more or less consistently among white collar

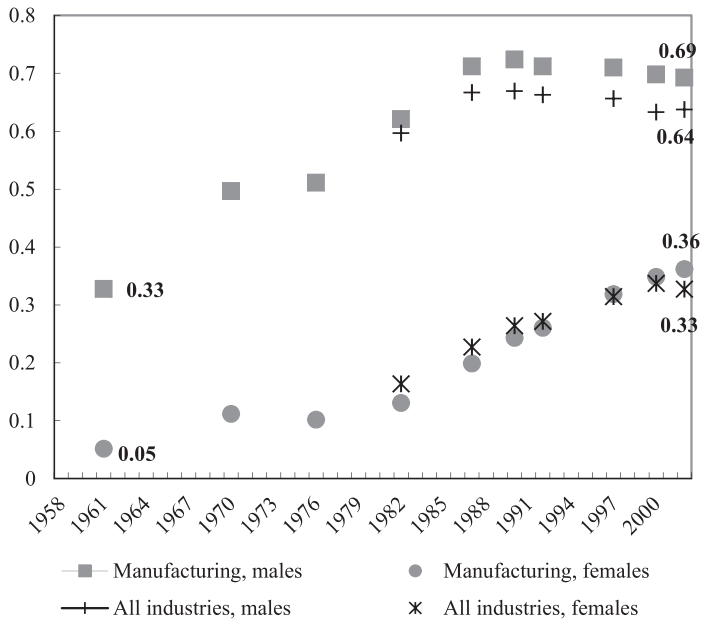

Figure 5. Proportion of 40–49 Year Old Workers with at Least 15 Years Continuous Service (By Gender, Occupation Totals, MC1, EC)

workers in manufacturing industries from 1954 and among blue collar workers from 1961. This would also apply to companies with 100–999 employees in all industries since the 1980s (＋ and ＊). Given constantly changing production technology and organizational composition, the usefulness of skills with limited application was being lost. Moreover, the shrinkage was further promoted by an increase in the supply of specific skills due to the trend toward longer years of service. Actually, as Figure 5 shows, the length of service for males increased (■), and this was also the case for females from the 1980s onwards (●).

For males, in-house training was a beneficial investment. Calculating the rate of productivity increase due to this, in manufacturing industries in 1997, it was 2.6% per year in real terms for blue collar workers (=exp((0.36+0.29)/25)-1) and 3.6% for white collar workers. For white collar workers in all industries for companies with100–999 employees in 2002, it was 3.4%.[8] Although not reaching the rate of increase due to school education seen in the next section, there were cost advantages in that there was no need for full-day instructor's fees, book costs or classrooms, while the income loss for trainees was small. In addition, general skills maintained their usefulness for a long time, despite increased supply.

From now on, general training for females will also probably become a benefical investment. As Figure 5 shows, the ratio of females with at least 15 years of service compared to all in their 40s was 36% for manufacturing industries and 33% for all industries in 2002,

[8] For white collar workers in all industries for companies with 100–999 employees in 2002, the wage gap between length of service 25–29 years and 1–2 years was 0.25.

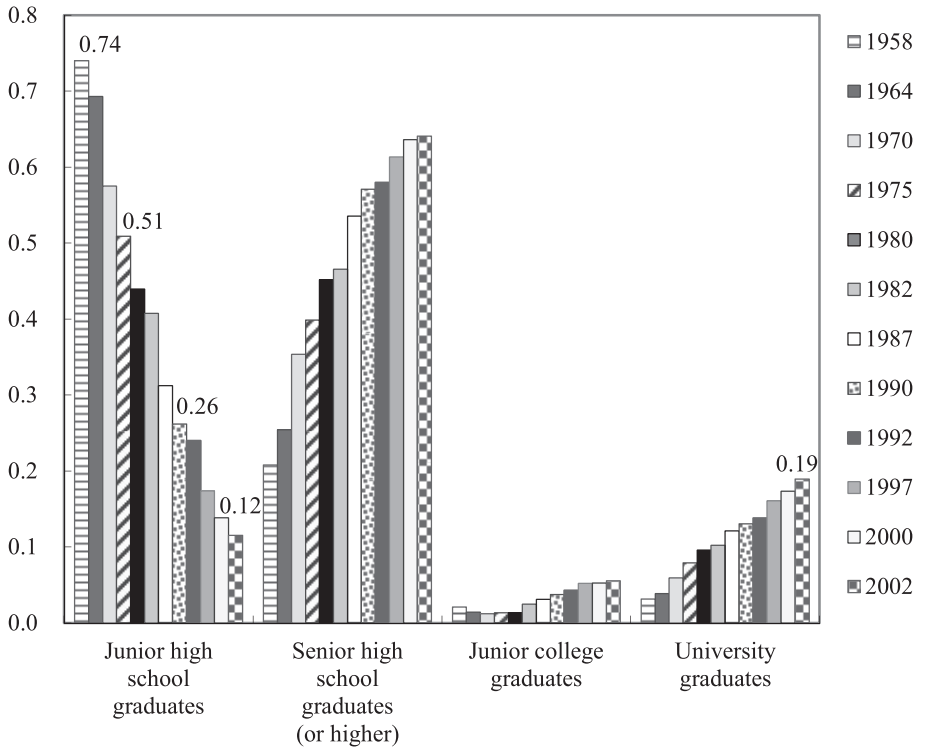

Figure 6. Educational Background Distribution in Manufacturing Industries
(By Gender, Occupation Totals, MA1, MA2, MA3, EC)

about half of the level for males. In other words, if provided the same training as men, they could be expected to yield half the rate of return. In future, if the environment for continuous service can be improved, the outlook for recouping an even greater yield will be enhanced. In-house training could become a valuable investment for women in future, just as it was for men in the past.

(2) Wage Differentials Based on Educational Background

The spread of higher education advanced with steady rapidity. Figure 6 shows changes in the distribution of educational backgrounds in manufacturing industries.[9] The ratio of junior high school graduates was three in every four workers in 1958, but by 1975 this had fallen to one in every two, by 1990 to one in four, and by 2002 to one in ten. Senior high school graduates (or higher) gradually increased, exceeding the number of junior high school graduates in 1980. At this point, some 90% of workers were either junior high school

[9] In the figure, "Senior high school graduates (or higher)" include "Junior college graduates" and "University graduates" as well as senior high school graduates among female white collar workers up to 1980.

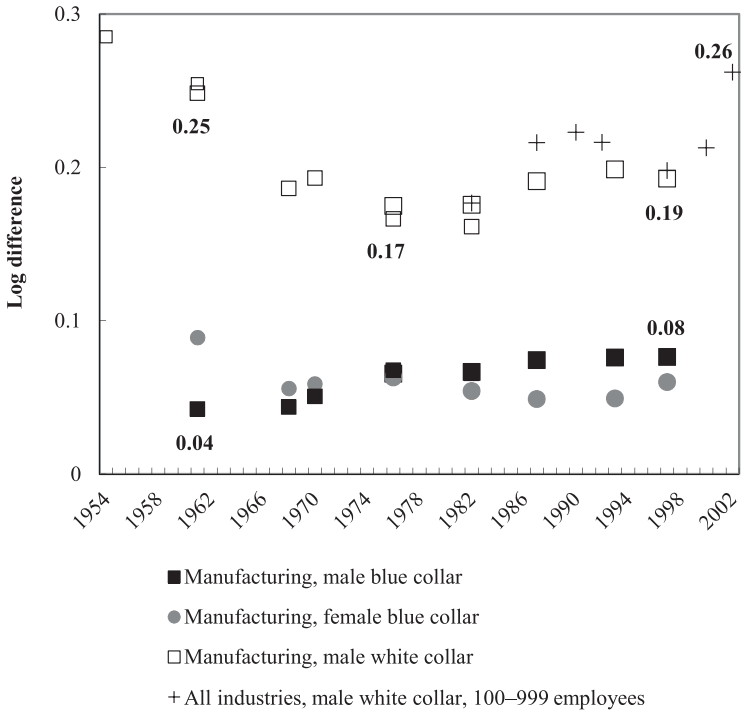

Figure 7. Wage Differentials by Educational Background (MC54, MC1, MC2, EC): Senior High School Graduates or Higher / Junior High School Graduates (Blue Collar), University Graduates / Senior High School Graduates (White Collar)

or senior high school graduates (or higher). But from around 1990 the pace of increase in senior high school graduates (or higher) slowed, and university graduates rapidly increased among white collar workers.

So did the increase in workers with higher educational backgrounds cause the wage gap based on educational background to narrow? Figure 7 depicts the wage differential of senior high school graduates (or higher) compared to junior high school graduates for blue collar workers in manufacturing industries (■ and ●), and that of university graduates compared to senior high school graduates among male white collar workers (□). Although the gaps among white collar workers narrow in the era of high economic growth, there was no sign of such a phenomenon among male blue collar workers. The reason for this must be that, due to the increasing introduction of new technology in the manufacturing sector, the demand for academic skills there increased.[10] From the 1980s, the stage of technological innovation shifted from factory to office, spreading from manufacturing industries to ter-

[10] Here, "academic skills" refers to the ability to collect and understand the necessary information, and to apply reasoning to this to solve problems.

tiary industries. With the introduction of ICT, in particular, each person in white collar workplaces came to be assigned multiple tasks requiring judgements by utilizing complementary sources of information.[11]

If production technology and organizational composition change, so too do the skills demanded by companies. And if job contents change as shown above, the hiring criteria change from physical ability to mental ability, from a submissive type to a proposing type, and to a type that works in a team rather than a craftsman type. In other words, the scientific knowledge, reasoning power and interpersonal skills learned at school became more prioritized than before. Since 1980, the sifted to services in the economy has given added impetus to this trend. This helps to explain why wage gap has widened despite the sharp increase in university graduates.

Therefore, school education is another beneficial investment for increasing productivity. For males in manufacturing industries, a productivity increase of 4.9% per year of university education (=exp(0.19/4)-1) and, for blue collar workers, 2.7% per year of senior high school education (=exp(0.08/3)-1) were achieved in 1997. Moreover, the effect of university education in all industries for companies with 100–999 employees in 2002 was 6.7% for males and 9.7% for females. These figures exceed the effect of in-house training. Now that the university enrollment rate has passed 50%, universities, in particular, play a crucial role as mechanisms for human capital formation.[12]

(3) Wage Differential Based on Company Size and Industry

Let us now examine trends in wage differentials between the large companies with 1,000 employees or more and the small companies with 10–99 employees. For male blue collar workers, wages in the small stood at only 67% of those of large companies in 1958 (=exp(-0.40)), but had risen to 82% in 1964 (Figure 8). One of the reasons for this is that, in response to aggressive equipment investments, employment expanded in the machinery industry where there were many small companies (Figure 9).[13] Nevertheless, this direction

[11] Murnane and Levy (1996), Bresnahan, Brynjolfsson and Hitt (1999), Lindbeck and Snower (2000), etc.

[12] For the record, the targeted variable is not the length of years in education but the level of cognitive ability (power of reason). Hanushek and Woessmann (2008, table 2, table 4) regressed each country's growth rate onto the quality of its institutions (degree of property rights security), openness to trade, cognitive ability (TIMSS, PISA and other test scores rather than average years of education), and latitude, among other factors. As a result of their estimation, cognitive ability has positively significant effects and is as important as the quality of the institutions. In countries that were not colonized, people have to raise productivity by forming quality institutions (set of incentives) endogenously.

[13] Nakamura (1993, 518) states that, in around 1960, "Machinery production for investments could no longer keep pace, so a series of new companies and factories sprang up. Traveling out of Tokyo on the Tokaido Line, most of the countryside had disappeared nearly as far as Odawara; factories lined the route from Ueno to Saitama, even almost as far as Takasaki. All of these changes occurred in this period."

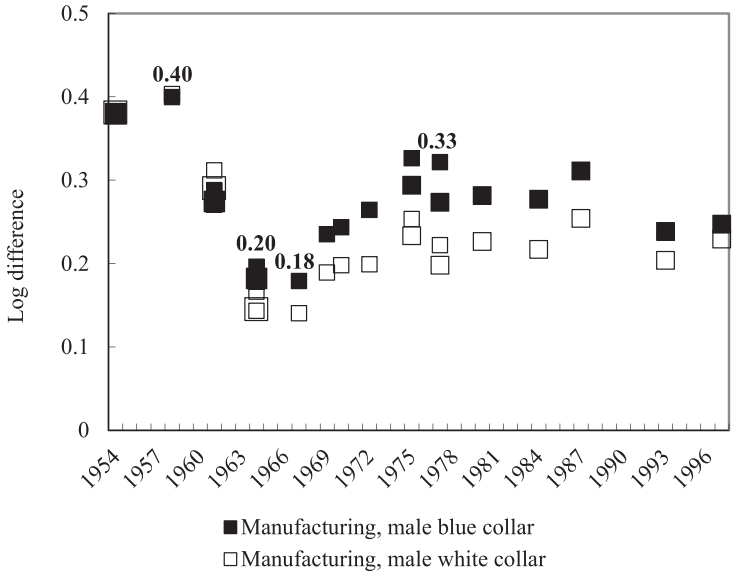

Figure 8. Wage Differentials by Company Size (MA54, MA1, MA2, MA3): 1,000 Employees or More / 10–99 Employees

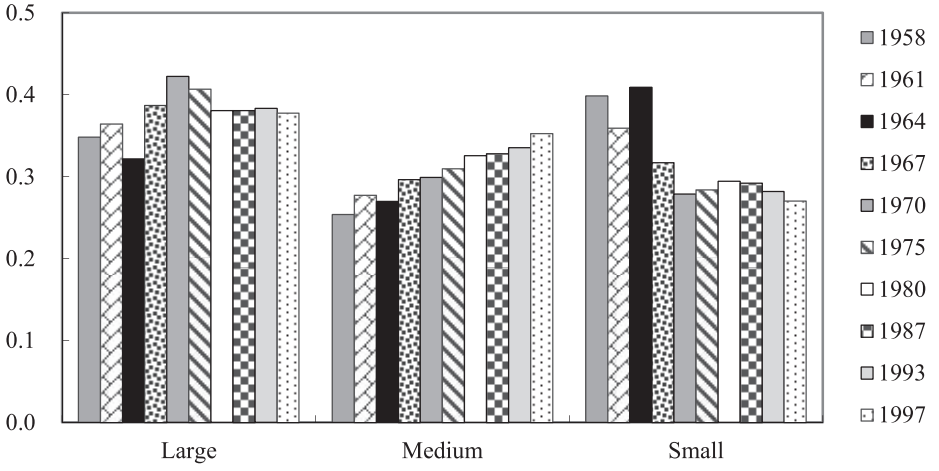

Figure 9. Company Size Distribution of Males in Manufacturing Industries (Occupation Totals, MA1, MA2, MA3)

was reversed at the end of the 1960s, falling from 84% in 1967 to 72% in 1976. There were fewer new company startups, while some small companies grew into medium-sized. From the 1980s, although the gap has stayed more or less constant, small companies exposed to global competition have reduced their employment ratios.

Finally, let us touch on some points of note concerning wage differentials based on

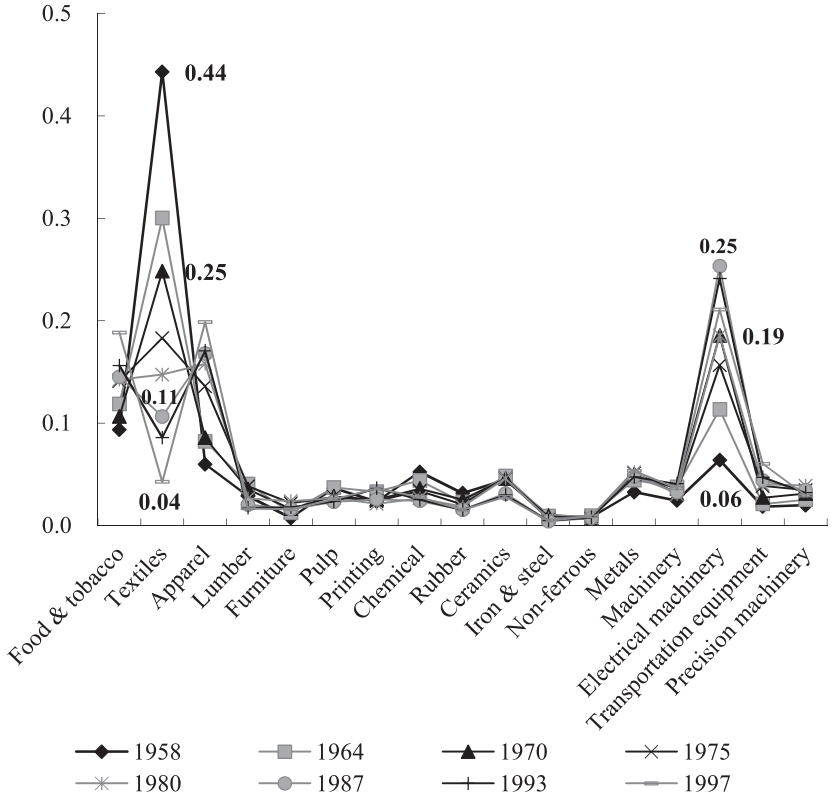

Figure 10. Industrial Distribution of Female Blue Collar Workers
(Denominator = Female Blue Collar Totals, MA1, MA2, MA3)

industry. As the role of leading light industry shifted from textiles to electrical machinery, it was females who made possible a smooth transition in the necessary labor force. As the industrial distribution in Figure 10 shows, the textiles industry employed 44% of female blue collar workers in 1958. However, while the ratio of employment in textiles declined to 25% by 1970, that in electrical machinery increased to 19%. In the second half of the high economic growth era, in particular, labor demand in electrical machinery was extremely strong. In response to this, the industrial distribution of female workers changed to a twin-peak pattern. By 1987, employment in textiles had fallen to 11%, and one in every four female blue collar workers was working in electrical machinery. And from around the same time, employment opportunities for female workers shifted from manufacturing to service industries. Women helped to transform the industrial structure by smoothly entering the labor force of growing industries.[14]

How did their wage differentials based on industry change amid this process? Figure 11 shows the wage gap between employment in electrical machinery and textiles for female

[14] The author is indebted to Professor Inoki for this point.

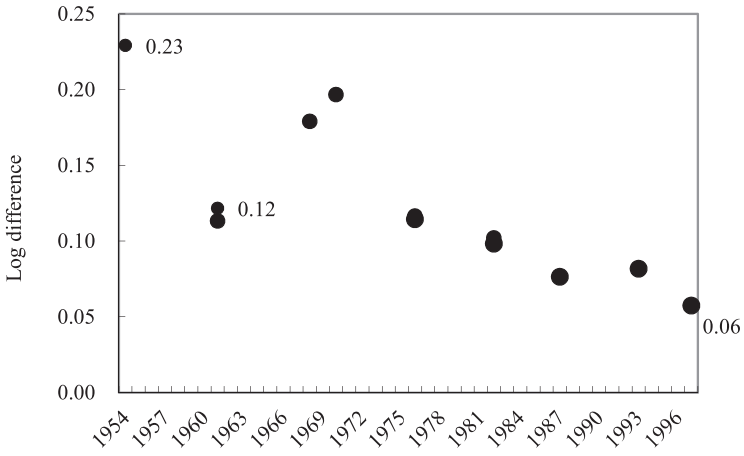

Fig. 11. Electrical Machinery / Textiles Wage Differentials for Female Blue Collar Workers (MC54, MC1, MC2)

blue collar workers. In 1954, wages for textile workers were 21% lower than those for electrical machinery workers (=exp(-0.23)-1). In some regions, textiles presented the only opportunity for mass employment of females graduating from junior high school; there, the ratio of women among blue collar workers was extremely high, while the wages of these female workers stayed low.[15] In the second half of the 1950s, women were on the way to being liberated from these limited employment opportunities, and in 1961 the gap narrowed by half. From the second half of the 1960s, a strong demand arose from electrical machinery, and the gap widened again. Between 1964 and 1970, the number of female blue collar workers in electrical machinery increased about 1.5 times from 248 thousands to 365 thousands.[16]

From the 1970s onwards, differentials narrowed uniformly. Employment opportunities for women broadened to foods, apparel, electrical machinery, and services, and wages became equalized across industries. In fact, calculating the variance in industry premiums based on manufacturing industry major groups, it fell sharply from 0.0220 in 1954 (MC54) to 0.0112 in 1961 (MC54). Then, between the 1960s and the oil crises, it fell from 0.0119 in 1961 (MC1) to 0.0093 in 1976 (MC1), and thereafter from 0.0092 in 1976 (MC2) to 0.0081 in 1987 (MC2) and 0.0061 in 1997 (MC2).

[15] See Kase (1997) for the connection between female junior high school graduates and textiles. The situation at the time can also be inferred from Yukio Mishima (1987), *Kinu to Meisatsu* ("Silk and Insight," Shincho Bunko).

[16] This is not to say that the working conditions in electrical machinery were especially pleasant. See Furukawa (1969).

III. Labor Quality and Economic Growth

In the previous Section, we saw how human capital formation through school education and in-house training has been a useful investment over a long period of time. In that case, we would expect the spread of higher education, the aging of the workforce, and the prolongation of tenure to have enhanced the quality of the labor force. Here, the discussion will examine how far the labor quality has risen via the respective channels over the last four decades or so, and how much and in what form the accumulated skills have contributed to economic growth.

1. Change in Labor Quality and Its Decomposition

First, we shall set up a framework to measure changes in quality using simple algebra. Let us assume that the labor force consists of n types of workers, and that in year t there are N_{lt} workers of type $l = 1,...,n$. We shall also assume that the total labor input is expressed by the linearly homogeneous function $H_t = H(N_{1t}, N_{2t},..., N_{nt})$. If the total number of workers is written as $N_{\cdot t} \equiv \sum_{l=1}^{n} N_{lt}$ and the type l component ratio as $n_{lt} \equiv N_{lt} / N_{\cdot t}$, we have $H_t = q_t \cdot N_{\cdot t}$, $q_t \equiv H(n_{1t}, n_{2t},..., n_{nt})$. Since q_t is the per capita input, this can be construed as the "labor quality." The product of quality and number of workers H_t is called the "effective input" or "labor input in efficiency units."

If a typical company minimizes its personnel costs, the productivity ratio will be equal to the wage ratio, and we will have

$$\mathrm{d}\log q_t = \sum_{l=1}^{n} \frac{\frac{\partial H}{\partial N_{lt}} \cdot N_{lt}}{\sum_{l=1}^{n} \frac{\partial H}{\partial N_{lt}} \cdot N_{lt}} \mathrm{dlog}(n_{lt}) = \sum_{l=1}^{n} \frac{w_{lt} n_{lt}}{\sum_{l=1}^{n} w_{lt} n_{lt}} \mathrm{dlog}(n_{lt}) \tag{1}$$

In other words, the rate of change in quality will be equal to the average rate of change in the component ratio, weighted by the share in personnel costs $\theta_l \equiv w_{lt} n_{lt} / \sum_l w_{lt} n_{lt}$ of each type. The right-hand side of this equation is called "Denison's rate of change" (Denison 1962; Griliches 1970).

Now let us obtain an index for quality by estimating a wage function. For simplification, we assume that the type of worker is determined by the levels of two factors—education (α) and age (β)—and that the following equation has been obtained by regression:

$$\log \hat{w}_{jkt} = \mu_t + \alpha_j + \beta_k \tag{2}$$

where *t, j, k* indicate the levels for the year, education and age. If we then substitute this

$\hat{w}_{jkt}$ into equation (1), the result is

$$\mathrm{d}\log q_t \cong \sum_{j,k} \frac{\hat{w}_{jkt} n_{jkt}}{\sum_{j,k} \hat{w}_{jkt} n_{jkt}} \mathrm{d}\log(n_{jkt}) = \sum_{j,k} \frac{e^{\alpha_j+\beta_k} n_{jkt}}{\sum_{j,k} e^{\alpha_j+\beta_k} n_{jkt}} \mathrm{d}\log(n_{jkt}) = \mathrm{d}\log(\sum_{j,k} n_{jkt} e^{\alpha_j+\beta_k}) \tag{3}$$

Here, as e^{μ_t} is cancelled out, $\omega_{jk} \equiv e^{\alpha_j+\beta_k}$ in the final expression does not depend on the year *t*. Therefore, as the rate of change in q_t (nearly) concurs with that in $\hat{q}_t \equiv \sum_{j,k} n_{jkt}\omega_{jk}$, the latter $\hat{q}_t$ can be used as an index of quality.[17] In particular, $\hat{q}_t N_{\cdot t} = \sum_{j,k} N_{jkt}\omega_{jk}$ can also be used as an index of effective input. This index is a weighted average for productivity across all types (excluding year effects), and the weight is the component ratio of each type. As a result, if the component ratio of types with high productivity rises, this value also rises, showing the improvement in quality. Below, let us use the term "rate of change in quality" to express the logarithmic difference between two years $\Delta\log\hat{q} \equiv \log\hat{q}_t - \log\hat{q}_s$. To convert this to an annual rate, it will be divided by $t-s$.

Now let us decompose the rate of change in quality into the contribution made by each factor. First, we substitute $x = \log\omega_{jk}$, $m = \sum_{j,k} n_{jkt}\log\omega_{jk} \equiv m_t$ into the Taylor approximation $e^x \cong e^m + e^m(x-m) + \frac{e^m}{2}(x-m)^2$. If we then multiply each side by n_{jkt} and take the summation $\sum_{j,k}$, the result will be

$$\sum_{j,k} n_{jkt}\omega_{jk} = \sum_{j,k} n_{jkt} e^{\log\omega_{jk}} \cong e^{m_t}\left\{1 + \frac{1}{2}\sum_{j,k} n_{jkt}(\log\omega_{jk} - m_t)^2\right\} \tag{4}$$

By taking the logarithm of each side and calculating the difference between year *t* and year *s*, the result will be

$$\Delta\log\hat{q} \cong \sum_{j,k}(n_{jkt} - n_{jks})\log\omega_{jk} + \log\left\{\frac{2 + \sum n_{jkt}(\log\omega_{jk} - m_t)^2}{2 + \sum n_{jks}(\log\omega_{jk} - m_s)^2}\right\} \tag{5}$$

Therefore, if there is hardly any change in variance of the log wage distribution in the se-

[17] Even without estimating the wage function, Denison's rate of change can also be calculated using $\Delta\log q^{trans} \equiv \sum_{j,k}\frac{1}{2}\left(\frac{w_{jkt}n_{jkt}}{\sum_{j,k} w_{jkt}n_{jkt}} + \frac{w_{jks}n_{jks}}{\sum_{j,k} w_{jks}n_{jks}}\right)(\log n_{jkt} - \log n_{jks})$. Also, if the *H* function is a translog type, this will coincide exactly (not approximately) with $\log q_t - \log q_s$ based on the minimization of personnel costs. However, not only does using the estimated wage make the calculation result less easily influenced by abnormal data values, but also the translog type itself is an approximate expression of the general production function, in the first place. In this paper, therefore, $\hat{q}$ in the main text is used as an index of quality. Moreover, there is no major difference with the actual calculation results (for example, for males in 1961-70, the annual rate is $\Delta\log q^{trans}$ = 1.360%, $\Delta\log\hat{q}$ = 1.350%).

cond term, this term can be omitted and the equation approximated thus:

$$\Delta \log \hat{q} \cong \sum_{j,k} (n_{jkt} - n_{jks}) \log \omega_{jk} = \sum_{j} (n_{j.t} - n_{j.s}) \alpha_j + \sum_{k} (n_{.kt} - n_{.ks}) \beta_k \qquad (6)$$

Here, let us call the central expression the "approximated rate of change in quality" and write it $\Delta \log \hat{q}^{dec}$. The right-hand side is the decomposed contributions by the factors: the first term is the contribution due to change in the education distribution, and the second term is the contribution due to change in the age distribution.[18]

This approximation implies that $\hat{q}_t^{edu} \equiv \exp(\sum_j n_{j.t} \alpha_j)$ can be used as an index of quality with respect to education. This is because this logarithmic difference coincides with the first term on the right-hand side. Contrastingly, Goldin and Katz (2001) and Delong, Goldin and Katz (2003, appendix 2B) use $\hat{q}_t^E \equiv \sum_j n_{j.t} \exp(\alpha_j)$ as the educational productivity index, with the part corresponding to education extracted (somewhat forcibly) from the original index $\hat{q}_t \equiv \sum_{j,k} n_{jkt} \omega_{jk}$.[19] In the following, results based on the latter will also be given.

Table 1 gives the rates of change in quality (per annum) in manufacturing industries and their decompositions. These were calculated in accordance with the method described above at intervals of about ten years. $\Delta \log \hat{q}^E$ based on the method of Goldin and Katz is given in the far right column, and it hardly differs at all from $\Delta \log \hat{q}^{edu}$ of the fifth column. For males, the quality of the labor force rose at an annual rate of 1.35% or 1.25% between 1961 and 1982, but after peaking in 1982, the speed slowed by half. The reason for this is that, in the second half of the 1980s, the baby boom generation entered its 40s and the pitch of skill accumulation in the workplace slowed down. However, the spread of higher education (and in particular, the rapid increase in university graduates) softened the decline. In 1992–2002, schools accounted for around 40% and workplaces for around 60% of human capital formation.

For females, factors that raised quality were mobility between industries and occupations, school education and specific training. In the 1960s, more than 30% of the productivity increase was due to the kind of mobility between industries mentioned above and the transition to white collar occupations. Thereafter, the role played by school education gradually increased. The female labor force can be said to have accumulated skills due to the

[18] These contributions do not depend on which level is made the basis in estimating the wage function. In other words, $\Delta \log \hat{q}^{edu} = \sum_j (n_{j.t} - n_{j.s})(\alpha_j - \alpha_1) = \sum_j (n_{j.t} - n_{j.s})(\alpha_j - \alpha_2)$.

[19] Delong, Goldin and Katz (2003, appendix 2B) estimate the wage function for two years separately and use the average of α_{jt} and α_{js} as α_j. Meanwhile, Aaronson and Sullivan (2001) take the geometric mean of the rate of change when using α_{jt} and that when using α_{js} as the rate of change in quality concerning education. We have pooled data from the two years and used the estimated wage function in a form including a year dummy. There is hardly any difference in the calculation result whichever method is used.

Table 1. Change in Labor Quality and Its Decomposition in Manufactuaring Industries (Annual Rates, MC1, EC)

	Rate of change in quality (⊿log*qhat*)	Approximated rate of change in quality (⊿log*qdec*)	Industry/ Company size	Occupation	Education	Age	Length of service	Goldin-Katz method (⊿log*qE)*
A. Males								
1961−1970	1.350%	1.500%	0.056%	0.075%	0.136%	0.720%	0.511%	0.140%
		100	3.8	5.0	9.1	48.0	34.1	
1970−1982	1.251%	1.324%	0.002%	0.027%	0.150%	0.620%	0.524%	0.153%
		100	0.1	2.1	11.4	46.8	39.6	
1982−1992	0.584%	0.515%	-0.003%	0.056%	0.235%	0.053%	0.174%	0.232%
		100	-0.5	10.9	45.6	10.3	33.7	
1992−2002	0.476%	0.490%	-0.012%	0.006%	0.193%	0.140%	0.163%	0.189%
		100	-2.4	1.2	39.4	28.6	33.2	
B. Females								
1961−1970	0.775%	0.745%	0.117%	0.123%	0.134%	0.042%	0.330%	0.136%
		100	15.7	16.5	17.9	5.6	44.3	
1970−1982	0.482%	0.471%	0.001%	0.029%	0.081%	-0.105%	0.465%	0.081%
		100	0.2	6.2	17.2	-22.2	98.6	
1982−1992	0.638%	0.616%	0.011%	0.135%	0.173%	-0.016%	0.314%	0.175%
		100	1.8	21.9	28.1	-2.6	50.9	
1992−2002	0.800%	0.736%	0.010%	0.097%	0.226%	0.040%	0.363%	0.235%
		100	1.4	13.2	30.7	5.4	49.3	

Note: MC1's contractual earnings from 1961 to 1982 and EC's scheduled earnings from 1982 to 2002 were used. The third column is based on changes in the industrial distribution of the labor force up to 1982, and on changes in the company size distribution after 1982. Meanwhile, the smallest share of male personnel costs is 0.81 (1970), the largest is 0.84 (2002), and the average is 0.82.

Table 2. Change in Labor Quality and Its Decomposition in All Industries (Annual Rates, EC)

	Rate of change in quality ($\Delta\log ghat$)	Approximated rate of change in quality ($\Delta\log qdec$)	Industry	Corporate scale	Occupation	Education	Age	Length of service	Goldin-Katz method ($\Delta\log qE$)
A. Males									
1982-1992	0.595%	0.537%	0.009%	-0.011%	0.037%	0.243%	0.097%	0.162%	0.240%
		100	1.6	-2.0	6.9	45.3	18.1	30.2	
1992-2002	0.504%	0.524%	0.012%	-0.006%	0.010%	0.215%	0.180%	0.111%	0.211%
		100	2.4	-1.1	2.0	41.0	34.4	21.3	
B. Females									
1982-1992	0.678%	0.670%	0.034%	0.022%	0.116%	0.304%	0.009%	0.184%	0.306%
		100	5.1	3.3	17.4	45.4	1.3	27.5	
1992-2002	1.060%	1.043%	0.111%	-0.005%	0.119%	0.410%	0.127%	0.282%	0.418%
		100	10.6	-0.5	11.4	39.3	12.1	27.1	

spread of higher education and prolongation of continuous service. Although the latter made the larger contribution, if we recall that the tenure premium is on the decline, these will continue to raise the quality as two main channels for the time being.

On the other hand, although the female workforce went through the same aging process as the male workforce, there was no resultant improvement in quality. This is because they were excluded as targets of general training. The other side of this coin is that, if their continued employment broadens in future, they will become a promising channel for improving overall quality, hand-in-hand with the rise in their participation rate.

The same trend can also be seen for all industries (Table 2). For both men and women, about 40% of the rise in quality since the 1980s has been borne by school education. At the same time, for males, the contribution due to in-house training accounted for around 50%. Women also seem to have started taking part in general training recently. However, this does not alter the fact that females continue to provide a labor force that responds flexibly to industrial and occupational change.

Compared with the US experience, we find that both workplace OJT and Off-JT in Japan have played major roles in accumulating skills. According to Delong, Goldin and Katz (2003, table 2–1), the overall rate of change in quality in the USA in 1960–2000 was 0.28%, of which the contribution of school education accounted for 0.48% points (the overall quality decreased because many females with little work experience joined the labor market). In Japan's manufacturing industries in 1961–2002, the corresponding figures were 0.87% and 0.17% points, respectively, most of the 0.70% points difference being due to in-house training.[20] In addition, judging from the results of Table 2, the contribution of in-house training can be said to have been larger in Japan than in the USA for all industries as well.

[20] First, the average rate of change for 1961–2002 was calculated separately for males and females, from the rates of change in quality in Table 1, weighted by the number of years in the period. Next, the combined rate of change in quality for males and females was calculated with the males' share in personnel costs (0.82) as weighting. The contribution of education was also calculated in the same way.

2. Contribution to Economic Growth

To what extent did the rise in quality contribute to economic growth? If we take a country's production function as $Y = F(A_{Kt}K_t, A_{Ht}H_t)$, where $F(.)$ is homogeneous of degree one and K_t and $H_t = q_t \cdot N_{\cdot t}$ (as above) are the inputs of physical and human capital, respectively, based on the minimization of total costs, the rate of rise in labor productivity will be determined by the following equation:

$$\mathrm{d}\log\frac{Y_t}{N_{\cdot t}} = \mathrm{d}\log A_t + \alpha\,\mathrm{d}\log\frac{K_t}{N_{\cdot t}} + (1-\alpha)\mathrm{d}\log q_t, \quad A_t \equiv A_{Kt}^{\alpha}A_{Ht}^{1-\alpha}, \tag{7}$$

where α is the capital share.

The second term on the right-hand side is the contribution due to the rise in the capital-labor ratio, while the third term is the contribution due to the improvement in quality. The first term is called the rate of technical progress, and is calculated by subtracting the second and third terms on the right-hand side from the left-hand side.

The contributions due to rises in quality toward labor productivity growth are not so large. For manufacturing industries, if the rate of labor productivity increase and the contributions due to quality are calculated for the same periods as in Table 1, each would record 9.5% and 0.6% points in 1961–70, 5.1% and 0.6% points in 1970–82, 3.1% and 0.3% points in 1982–92, and 3.1% and 0.3% points in 1992–2002. Thus, in general, the accumulation of human capital only explains about 10% of the rate of labor productivity increase. The accumulation of physical capital accounts for around 60% and the rate of technical progress around 30%.[21]

However, human investments must be made in tandem with production technology. In response to fast-evolving technology, complementary skills would have been supplied by the labor market. To show this, we need to examine the nature of technological change. So finally, let us use a simple method to clarify the educational bias in technological change, and see how the spread of higher education responded to this.

3. Bias in Technological Change[22]

Let us focus on the output (or effective input) by male blue collar workers, and assume that this is produced by senior high school graduates *R* and junior high school gradu-

[21] In manufacturing industries, "Gross Domestic Product classified by Economic Activities" and "Employed Persons" in the National Accounts were used for Y_t and $N_{\cdot t}$, and the capital distribution ratio was calculated as (operating surplus + consumption of fixed capital) / (operating surplus + consumption of fixed capital + employed persons' income). The rate of change in quality was calculated from Table 1, taking the males' share in personnel costs as 0.82. For K_t, tangible fixed assets on an installed basis were taken from "Annual Report on Gross Capital Stock of Private Enterprises (1990 prices, FY1955–1996" and "Annual Report on Gross Capital Stock of Private Enterprises (2000 prices, FY1980–2009)."

[22] The method of analysis in this section is based on Goldin and Katz (2008, chap. 8) and Acemoglu and Autor (2012).

ates *Z* in accordance with the following CES function:

$$H_{it} = A_{it}\{(1-\varphi_i)(B_{Rt}R_{it})^{-\rho} + \varphi_i(B_{Zt}Z_{it})^{-\rho}\}^{-1/\rho}, \quad \rho > -1. \tag{8}$$

Here, the subscript *i* indicates industry, *t* the year, and φ_i is the distributive parameter of industry *i*, while B_{Rt} and B_{Zt} are the efficiency parameters for senior high school and junior high school graduates respectively. These efficiency parameters show the augmenting multiple of each input. The increase in them means that, thanks to technological change, an even greater production is obtained from the same input volume. For example, when new machinery and devices are put to better use by applying the skills of senior high school graduates, $b_t \equiv B_{Rt}/B_{Zt}$ will rise. In the following, it is assumed that efficiency parameters are common to all industries, while ρ is common to all industries and is constant over time. What concerns us here is the movement of b_t and the accompanying demand shift between educational backgrounds.

If a typical company minimizes its total personnel costs $w_{it}^R R_{it} + w_{it}^Z Z_{it}$ under equation (8), we will have

$$\frac{w_{it}^R}{w_{it}^Z} = \frac{1-\varphi_i}{\varphi_i} b_t^{-\rho} \left(\frac{R_{it}}{Z_{it}}\right)^{-(\rho+1)} \tag{9}$$

Here, the relative demand expressed as a logarithm will be

$$\log\left(\frac{R_{it}}{Z_{it}}\right) = -\frac{1}{\rho+1}\log\left(\frac{w_{it}^R}{w_{it}^Z}\right) + \frac{1}{\rho+1}\log\frac{1-\varphi_i}{\varphi_i} - \frac{\rho}{\rho+1}\log b_t \tag{10}$$

From this, we can see that $1/(\rho+1)$ is the elasticity of substitution of *R* and *Z*, and that if both of them are substitutes ($\rho < 0$, i.e. the elasticity of substitution is greater than 1), the bias of technological change and direction of demand change will be the same. Parts other than the first term on the right-hand side are shift factors in the relative demand curve. If we express this as DS, the rate of shift between points in time ΔDS may be calculated using

$$\Delta\text{DS} = -\frac{\rho}{\rho+1}\Delta\log b_t \tag{11}$$

ρ and $\Delta\log b_t$ are estimated as follows. Let us assume that the labor supply curve is vertical at the actual level of employment, and that supply and demand are equated through wage adjustment in the market. In this case, equation (10) will yield

$$\log\left(\frac{w_{it}^R R_{it}}{w_{it}^Z Z_{it}}\right) = \log\frac{1-\varphi_i}{\varphi_i} - \rho\log b_t - \rho\log\left(\frac{R_{it}}{Z_{it}}\right) \tag{13}$$

Here, R_{it}/Z_{it} measures the relative supply. In a sample consisting of 13 years and 17 industries (221 observations), we regress the logarithm of the ratio of wage shares onto the industry dummy, the year dummy and the logarithm of relative number of employed persons (using the total numbers of male blue collar workers as weights). ρ and

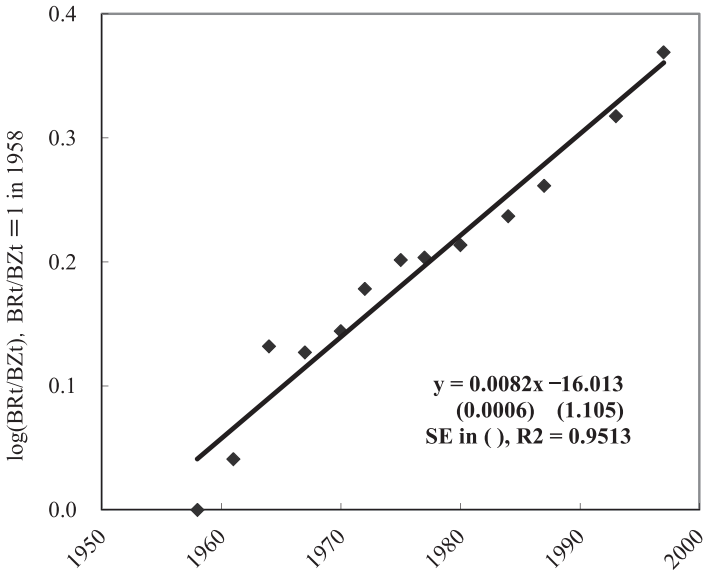

Figure 12. Trends in Log (BRt/BZt)

$\Delta \log b_t = \log b_t - \log b_s$ are estimable functions.

The estimation results are as follows. The estimated value of ρ is -0.884 (SE = 0.028), with the elasticity of substitution a very high 8.6. There are several conceivable reasons for this. The first could be that the estimation is limited to the same types of occupation (blue collar workers); the second could be that the difference in ability between junior high school and senior high school graduates is not so great. The third is that the variables of physical capital are abstracted here, but their rents have been lowered and substitution by junior high school graduates may have progressed. The fourth is that, because participation by new employees graduating from senior high school has increased, their average quality has been reduced, so that the relative demand on a number of persons basis may have increased. However, the task of developing a model that takes these into account will be left for another time.

Figure 12 shows trends in $\hat{\log} b_t$ (for convenience, $\log b_{1958} = 0$). For about 40 years, the nature of technological change was one augmented by academic skill. That is, new production technology had the characteristic of being used effectively in connection with scientific knowledge and powers of reasoning; this raised the work efficiency of senior high school graduates and improved productivity.[23] On average, the annual rate of increase in B_{Rt} is about 0.8% points higher than that of B_{Zt}. The progression of bias accelerates in an economic boom but slows down in a recession. This must be because the speed of technological change is affected not only by the quality of the new technology but also by the

[23] On the reasons why educational bias arises and examples of this, see Ueshima, Funaba and Inoki (2006) and their cited references.

Table 3. Shift in Relative Demand Curve ⊿DS (Male Blue Collar, Senior High School Graduates / Junior High School Graduates, Annual Rate)

1958–61	1961–64	1964–67	1967–70	1970–72	1972–75
10.4%	23.2%	-1.2%	4.4%	13.0%	5.9%
1975–77	1977–80	1980–84	1984–87	1987–93	1993–97
0.8%	2.5%	4.5%	6.2%	7.2%	9.9%

quantity of the capital investment embodying it.

As a result, as shown in Table 3, relative demand consistently shifted toward senior high school graduates. The reason for the variation in the rate of shift must be that, as stated above, more capital investments need more complementary workers from higher educational backgrounds in boom times . The spread of higher education not only raised productivity in response to the bias of technological change, but also seems to have prevented wage gap from widening in response to increased demand.[24]

IV. Conclusion

For nearly half a century, school education and in-house training remained effective investments despite the spread of higher education and aging of the workforce, serving as important channels for human capital formation. The role of the former in improving labor quality gradually grew larger. This was because technological change had an educational bias. Academic skills linked up with the new technologies to contribute to economic growth. In-house training, meanwhile, was responsible for about half of the accumulation of skills in the male labor force. By contrast, females were excluded from general training designed to nurture widely applicable skills. One might add that academic skills and general skills are synergistic. In the wage function, the cross terms of years in education and age have a positively significant coefficient, and companies place greater priority on written tests than on practical skills when hiring. After all, even in OJT, if workers do not know "how to use their heads," the return will be meager (Toyohara 1984).

The principal places of human capital formation are schools and workplaces. In the following, the present problems and improvement measures for each will be briefly examined. A huge shadow currently falling over school education is "impoverishment." At present, one pupil in every seven is receiving welfare benefits and schooling support. Japanese schools have no significant function for correcting inequality in the first place—for example, among all developed countries, Japan's correlation between parents' educational background and children's school grades is about average—and the equalizing function has re-

[24] Though not dealt with here, there is a possibility that the recent expansion of trade with developing countries may have further spurred the demand shift between educational backgrounds. On this point, see Sakurai (2011, chap. 6).

cently been growing even weaker (PISA 2004, 288–89; Kariya 2008, chap. 1). In view of the increasing importance placed on academic skills, early dropouts must be prevented. Three effective ways of achieving this would be to enhance preschool education, provide extra classes during the summer recess, and expand *juku* (cram school) vouchers and benefit-plan scholarships.[25] Sources of finance could be found if almost universal handouts of child allowances were stopped, and inheritance taxes could be raised. A situation whereby a child's school grades are bad or the child is unable to advance to higher education because the parents are poor is both inefficient in terms of allocation and unfair in terms of distribution.

What increasingly hinders training in the workplace is "non-regularization," i.e. the trend toward non-regular employment. The proportion of non-regular workers has now reached 35.1%, and the increase is particularly sharp among younger age groups. According to the *White Paper on the Labour Economy 2012*, as many as 3.55 million workers are in non-regular employment without wishing to be. Under the present situation whereby in-house training is only available for regular employees, this will result in large numbers of young people who have no training opportunities. Of course, some companies use non-regulars as a vital workforce, but overall, their acquisition of skills is poor and their wage profile is flat. Even if public vocational training were enhanced, it will not be a substitute for in-house training as long as the nucleus of skills lies in "responding to problems and change" (Koike 2005, chap. 1). Since many companies do not value non-regular experience, it will be harder for young people in non-regular employment to extricate themselves from low-wage, unstable employment as they grow older. In the economy as a whole, personal consumption and housing investment will slump, and labor productivity will not grow.

While it is therefore obvious that employment measures for young people should be enhanced, the author would like to advocate legally compliant work-sharing here. While non-regular employees increase, many companies depend on unpaid overtime by regular employees, as we all know. "Long working hours" are mainly responsible for bringing down levels of happiness in Japan; we need to increase normal employment and expand eligibility for training. To this end, the author would recommend three measures, namely holding classes on labor law (particularly legislation on working hours) in senior high schools, doubling the number of labor standards inspectors, and having workers record their own working hours. A law that is not observed is meaningless, and the rampancy of sweatshops is a matter of shame for labor administration. We need to strengthen the system for enforcing compliance with existing rules and make companies aware of the cost of overtime work. After that, the next three items for review would be to extend the validity period of unpaid wage claims, raise overtime premium rates, and make companies contribute to social security premiums for non-regular workers.

[25] See Heckman and Krueger (2003). Heckman (2008, 19–25) asserts that fostering non-cognitive abilities (e.g. perseverance and motivation) through early education has a cumulative effect on a person's later life.

Besides this, eliminating "long working hours" will also pave the way for the continued employment of women. The merits of this would be massive. Firstly, the labor participation rate of married women would rise. This is because, if overtime hours by a wife and her spouse decrease, it will be easier for them to balance home with work. Since a country's living standards are the product of labor participation rate multiplied by labor productivity, a rise in the participation rate will have a direct effect. Secondly, if they continue to work as regular employees for the same company, they will be given more training opportunities, and the labor quality will improve. We have seen that this channel was not used in the past. Thirdly, double incomes represent the biggest form of monetary support for households with children. Considering that the cost of childcare is a factor determining the number of children produced, and that birth rates are now high in countries where female participation rates are high, this would have the effect of holding up the birth rate.

In an era when the future is highly unpredictable, there can be no more certain investment than human capital formation, and this will be the second rocket for sustaining economic growth. On the demand side, the resultant shrinkage in wage distribution and stable employment will maintain social order, support personal consumption and housing investment, as well as boosting tax and social security revenues. Moreover, it will raise the birth rate and encourage education investment in the next generation. On the supply side, new technologies will be introduced, productivity raised, and new ideas created. On an individual level, too, people will feel a sense of fulfillment by acquiring scientific knowledge and powers of reasoning at school, then amassing experience in the workplace and having their work recognized. But in spite of that, many young people today still remain excluded from sufficient opportunities for education and training. In this country, currently active generations must pass the baton after bringing up the next generation. Conversely, if a resource-poor country were to lose its broad mechanisms for human capital formation, what prospects would actually remain?

Appendix: Notes on the Data

The statistical data for this paper were mainly taken from "Basic Survey on Wage Structure" (each year's edition). Data are recorded in two types of table called "age tables" and "age by length of service cross tables," based on manufacturing industry major groups and are industrial divisions. Firstly, age tables based on manufacturing industry major groups were used to create four data series. The first series, MA1, comprises 19 industries, 3 categories of corporate scale, 2 categories of educational background for male and female blue collar workers, 4 categories of educational background for male white collar workers, 2 categories of educational background for female white collar workers, and 6 age categories for the years 1958, 1961 and 1964. Thus, the formal cell count is 19 x 3 x (2+4+2+2) x 6 = 3,420. However, the number of cells in which data are actually recorded is 2,894 (1958), 2,935 (1961) and 2,929 (1964).

The second series, MA2, examines the years 1961, 1964, 1967, 1969, 1970, 1972, 1975 and 1977, and has a formal cell count of 20 x 3 x (2+4+2+2) x 9 = 5,400. However, the number of cells in which data are actually recorded ranges between 4,458 (1977) and 4,809 (1967). The third series, MA3, covers the years 1975, 1977, 1980, 1984, 1987, 1993 and 1997, and has a formal cell count of 18 x 3 x (2+4+2+2) x 11 = 5,940. The number of cells in which data are actually recorded ranges between 4,860 (1997) and 5,238 (1975). The fourth series, MA54, combines the categories for 1954, 1961 and 1964, and has a formal cell count of 19 x 3 x (1+4+1+2) x 8 = 3,648. However, the number of cells in which data are actually recorded is 3,000 (1954), 3,270 (1961) and 3,243 (1964).

Next, three series were created using cross tables based on manufacturing industry major groups. Since wages are higher for longer years of service even if the age is the same, cross tables give a better view of trends in differentials for each type of skill. The first series, MC1, covers the years 1961, 1968, 1970, 1976, 1977 and 1982, with 8 and 9 categories for age and length of service, respectively. Thus, the formal cell count is 18 x (2+4+2+2) x 8 x 9 = 12,960. However, the number of cells in which data are actually recorded is 6,555 in 1968 and for the other years ranges between 8,112 (1982) and 8,400 (1976).

The second series, MC2, comprises the years 1976, 1977, 1982, 1987, 1993 and 1997. The formal cell count is 18 x (2+4+2+2) x 8 x 11 = 15,840, but the number of cells in which data are actually recorded ranges between 9,763 (1997) and 10,957 (1976). The third series, MC54, combines categories in 1954 and 1961, and has a formal cell count of 17 x (1+4+1+2) x 8 x 8 = 8,704. However, the number of cells in which data are actually recorded is 5,417 (1954) and 6,390 (1961).

The final series, EC, was created from cross tables based on all industrial divisions in 1982, 1987, 1990, 1992, 1997, 2000 and 2002. This comprises 9 industrial categories ranging from mining, construction and manufacturing to service industries, with data on specific occupations given for the first three of these. The formal total cell count is 3 x 3 x (2+4+2+4) x 9 x 12＋6 x 3 x (0+4+0+4) x 9 x 12 = 27,216, but the number of cells in which data are actually recorded ranges between 12,905 (2002) and 13,485 (1992). EC enables us to ascertain the situation in all industries and the popularization of higher education among female white collar workers.

References

Aaronson, Daniel, and Daniel Sullivan. 2001. Growth in worker quality. *Economic Perspectives* 25, no. 4.

Acemoglu, Daron, and David Autor. 2012. What does human capital do? A review of Goldin and Katz's "The race between education and technology." *Journal of Economic Literature* 50, no. 2:426–63.

Bresnahan, Timothy F., Erik Brynjolfsson, and Lorin M. Hitt. 1999. Information technology, workplace organization, and the demand for skilled labor: Firm-level evidence.

Working Paper no. 7136, National Bureau of Economic Research, Cambridge, MA.

Delong, J. Bradford, Claudia Goldin, and Lawrence Katz. 2003. Sustaining U.S. economic growth. In *Agenda for the nation*, Henry J. Aaron, James M. Lindsay and Pietro S. Nivola. Washington, D.C.: Brookings Institution Press.

Denison, E. F. 1962. *The sources of economic growth in the United States and the alternatives before US*, Supplementary papers no. 13. New York: Committee for Economic Development.

Economic and Social Research Institute, Cabinet Office ed. 2001. *Choki sokyu shuyo keiretsu, kokumin keizai keisan hokoku: Showa 30 nen – Heisei 10 nen* [Long-term retrospective main series: Report on national accounts 1955–1998]. Tokyo: Economic and Social Research Institute, Cabinet Office.

Furukawa, Sachiko. 1969. Denki Sangyo ni okeru fujin rodo [Female labor in the electrical machinery industry]. In *Fujin rodo* [Female labor], ed. Ayako Oba and Shojiro Ujihara. Tokyo: Aki Shobo.

Goldin, Claudia, and Lawrence Katz. 2001. The legacy of U.S. educational leadership: Notes on distribution and economic growth in the 20th century. *American Economic Review* 91, no. 2:18–23.

———. 2008. *The race between education and technology*. Cambridge, MA: Belknap Press of Harvard University Press.

Griliches, Zvi. 1970. Notes on the role of education in production functions and growth accounting. In *Education, income, and human capital*, W. Lee Hansen. New York: Columbia University Press.

Hanushek, Eric A., and Ludger Woessmann. 2008. The role of cognitive skills in economic development. *Journal of Economic Literature* 46, no. 3:607–68.

Heckman, James J. 2008. Schools, skills, and synapses. Working Paper no. 14064, National Bureau of Economic Research, Cambridge, MA.

Heckman, James J., and Alan B. Krueger. 2003. *Inequality in America*. Cambridge, MA: MIT Press.

Inoki, Takenori. 1989. Seicho no kiseki [Tracks of growth]. In *Nihon keizaishi 8: Kodo seicho* [Japanese economic history 8: High economic growth], ed. Yasukichi Anba and Takenori Inoki. Tokyo: Iwanami Shoten.

Kariya, Takehiko. 2008. *Gakuryoku to kaiso* [Academic achievement and social class]. Tokyo: Asahi Shinbunsha.

Kase, Kazutoshi. 1997. *Shudan shushoku no jidai: Kodo seicho no ninaitetachi* [The age of collective employment: The bearers of high economic growth]. Tokyo: Aoki Shoten.

Koike, Kazuo. 1976. Kodo seicho to rodosha [High economic growth and workers]. In *Gendai Nihon keizaishi: Sengo 30 nen no ayumi (ge)* [A history of contemporary Japanese economy: 30 years of postwar progress (part 2)], ed. Tsuneo Iida, Tadao Kiyonari, Kazuo Koike, Akira Tamaki, Hideichiro Nakamura, Kimihiro Masamura and Mitsuru Yamamoto. Tokyo: Chikuma Shobo.

———. 1997. *Nihon kigyo no jinzai ikusei* [Human capital formation by Japanese companies]. Tokyo: Chuo Koronsha.

———. 2005. *Shigoto no keizaigaku* [Economics of work]. Tokyo: Toyo Keizai Shinposha.

Labour Statistics Research Division, Minister of Labour's Secretariat. 1968. *Sengo rodo keizai shi (Bunseki hen)* [Postwar labor and economic history (Analysis edition)]. Tokyo: Labour Statistics Research Division, Minister of Labour's Secretariat.

Lindbeck, Assar, and Dennis J. Snower. 2000. Multitask learning and the reorganization of work: From tayloristic to holistic organization. *Journal of Labor Economics* 18, no. 3:353–76.

Minami, Ryoshin. 1970. *Nihon keizai no tenkanten: Rodo no kajo kara fusoku he* [The point of transformation in Japan's economy: From labor surplus to shortage]. Tokyo: Sobunsha.

Mitani, Naoki. 2003. Rodo: Gino keisei to rodosha haibun [Labor: Skill formation and worker allocation]. In *Sengo Nihon keizai wo kensho suru* [A verification of Japan's postwar economy], ed. Toshiaki Tachibanaki. Tokyo: University of Tokyo Press.

Murnane, Richard J., and Frank Levy. 1996. *Teaching the new basic skills*. New York: Free Press.

Nakamura, Takafusa. 1993. *Showashi II 1945–1989* [Showa history II 1945–1989]. Tokyo: Toyo Keizai Shinposha.

Odaka, Konosuke. 1993. *Kigyonai kyoiku no jidai* [The age of in-house education]. Tokyo: Iwanami Shoten.

PISA. 2004. *Ikiru tamen no chishiki to gino 2* [Knowledge and skills needed for living 2]. Tokyo: Gyosei.

Sakurai, Kojiro. 2011. *Shijo no chikara to Nihon no rodo keizai: Gijutsu shinpo, Gurobaruka to kakusa* [Market forces and Japan's labor economy: Technical progress, globalization and wage differentials]. Tokyo: University of Tokyo Press.

Takamura, Juichi, and Hiroyuki Koyama, eds. 1994. *Nihon Sangyoshi 3* [Japanese industrial history 3]. Tokyo: Nihon Keizai Shinbun Shuppansha.

Toyohara, Tsuneo. 1984. *Kaitei shinban: Shokugyo tekisei* [New revised edition: Vocational aptitude]. Tokyo: Kodansha.

Ueshima, Yasuhiro. 2003. Why wages equalized in the high-speed growth era: Japanese manufacturing, 1961–69. *Journal of the Japanese and International Economies*, no. 17:33–55.

Ueshima, Yasuhiro, Takuji Funaba, and Takenori Inoki. 2006. New technology and demand for educated workers: The experience of Japanese manufacturing in the era of high-speed growth. *Journal of the Japanese and International Economies* 20, no. 1:50–76.

Yamaguchi, Kazuo, Takafusa Nakamura, Masao Sakisaka, Kazuma Hattori, and Takehei Miyashita, eds. 1994. *Nihon sangyoshi 2* [Japanese industrial history 2]. Tokyo: Nihon Keizai Shinbun Shuppansha.

Yamamoto, Kiyoshi. 1994. *Nihon ni okeru shokuba no gijutsu, rodoshi* [History of technology and labor on the shop floor in Japan]. Tokyo: University of Tokyo Press.

Yoshikawa, Hiroshi. 1997. Kodo seicho: Nihon wo kaeta 6000 nichi [High economic growth: 6,000 days that changed Japan]. Tokyo: Yomiuri Shinbunsha.

Japan's Period of High Economic Growth and Science and Technology Education: The Role of Higher Education Institutions

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The intent of this paper is to examine quantitative expansion in technology education during the high economic growth period, and its consequences, with a particular focus on the reinforcement of science and technology at institutions of higher education. Over the 1955–1975 period the number of science and technology students nearly quintupled, and the bulk of this growth was the result of three governmental plans to boost student capacity in these fields, which are referred to as "the 8,000-Student Plan," "the 20,000-Student Plan" and "the Rapid Increase Plan." The first two of these were essentially a part of Japan's manpower strategy aimed at achieving economic growth. However, even amid favorable economic conditions the implementation of these plans did not progress smoothly, and in particular it was difficult to regulate the quantitative scale of growth at public (non-national) universities and private universities. For this reason the government was forced to provide massive financial support for these institutions in exchange for cooperation with the plan. Also, while the effort to reinforce science and technology education involved the establishment of a new school format known as "colleges of technology," most of the quantitative expansion during this period took place in the undergraduate faculties of universities. Additionally, these reinforcement efforts were dependent on the strong ambition of private universities to create new faculties and expand existing ones. Amid consistently strong demand for human resources throughout the high economic growth period, the demand for engineers was particularly high during the 1960s, and the reinforcement of science and technology fed this demand. In the 1970s, however, the technical job market grew oversaturated, and graduates branched out into other fields. Through all this, there was only a highly tenuous relationship between science and technology reinforcement measures and Japan's national development plans.

I. Introduction

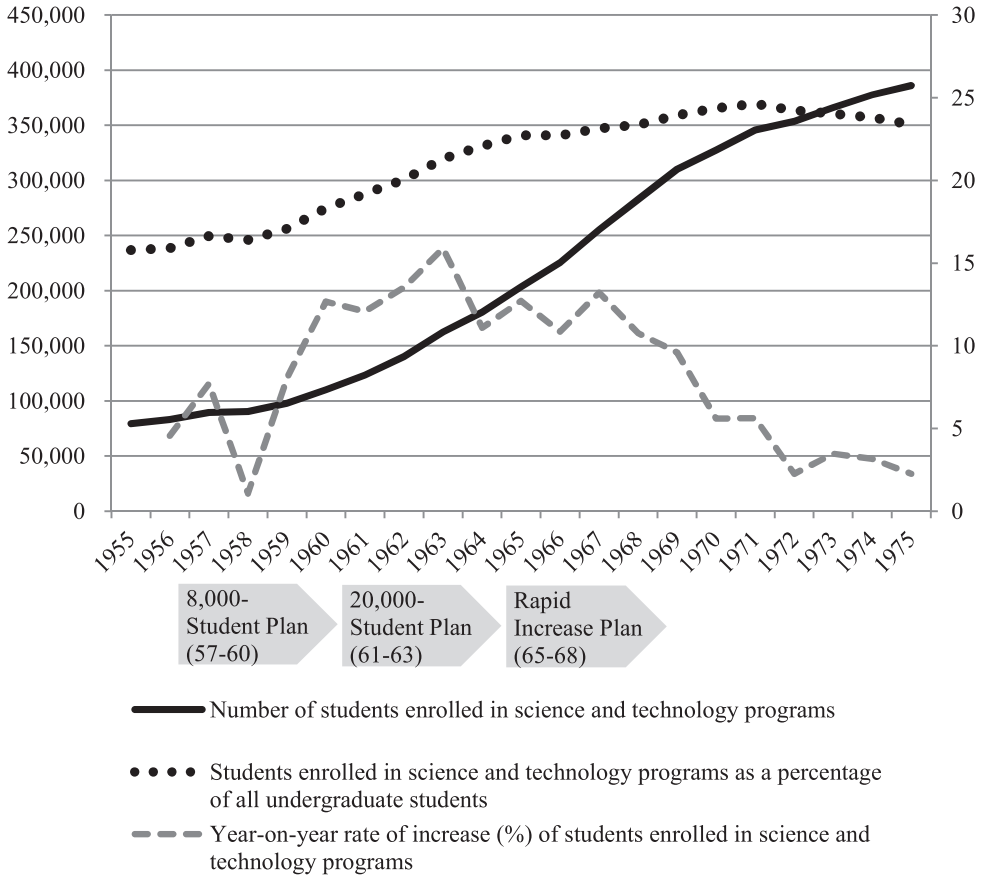
In November 1956, the Japan Federation of Employers' Associations (Nikkeiren, the predecessor to the present-day Japan Business Federation or Keidanren) released a statement entitled "Opinions on Technology Education to Meet the Needs of a New Era" (Japan Federation of Employers' Associations 1983). The statement expressed a strong sense of crisis regarding the state of technology education in Japan at the time. It noted that while the Soviet Union, Great Britain and the United States were each "putting intensive efforts into planning the education and training of engineers and technicians," in Japan "the importance of technology education goes virtually unrecognized, and at universities there continues to be a prejudice in favor of law and humanities over science and technology, while in mandatory education as well there are no apparent moves toward emphasizing the sciences or vo-

cational training." At this rate, "we will inevitably lag behind other nations, and fail to fulfill our duty to posterity." The statement strongly urged "the promotion of technology education, which is a pressing task we cannot afford to delay for even one more day," and went on to advocate, in addition to formulation of plans for cultivation of engineers and technicians, "the integration of two-year junior colleges (*tanki daigaku*) and high schools into five-year colleges of technology." Furthermore, to correct the "drastically imbalanced" ratio of science and technology studies to law and humanities studies at four-year universities, Nikkeiren called for "an intentional downsizing of law and humanities studies and a pivot toward science and technology (including at colleges of technology)," as well as reform of technology education at vocational/technical high schools and for working youth, and thorough, effective science education and vocational education at elementary and junior high schools.

What was done to allay the sense of impending crisis expressed in this statement, released right at the beginning of Japan's postwar period of high economic growth? Figure 1 shows the progression of the number of undergraduate students enrolled in faculties of science and technology at universities over the 20 years starting in 1955, which essentially correspond to the high economic growth period (in this paper, "faculty" refers to undergraduate programs at universities.) The number of students enrolled grew at an accelerating pace starting in the late 1950s, and continued rising until the early 1970s. Over this period the number of enrolled students nearly quintupled, swelling from around 80,000 to almost 400,000, and the year-on-year rate of increase stayed above 10% for over 10 years from the end of the 1950s. Of course the number of students attending university in general skyrocketed during this period, the period of greatest quantitative expansion in postwar Japanese university education, but even in this context the percentage of students enrolled in faculties of science and technology rose by nearly 8%. This represented an unprecedented increase in the number of people studying science and technology at university.

The intent of this paper is to examine this quantitative expansion in technology education during the high economic growth period, and its consequences, with a particular focus on the reinforcement of science and technology at institutions of higher education. The reason for focusing on the higher-education level lies in the unprecedented high expectations placed on institutions of higher education during the period, which is evident in the statement released by the Japan Federation of Employers' Associations.

Below, this paper will outline the contents, background and outcomes of three science and technology reinforcement policies implemented from the late 1950s through the 1960s, as well as a new program put in place primarily to cultivate engineers, namely the establishment of the "colleges of technology (*koto senmon gakko*)" system. In addition, this paper will discuss the role of these science and technology reinforcement measures and their relation to Japan's "industrial location policy." Note that in this paper, the term "institutions of higher education" encompasses several categories: colleges and universities (including graduate schools), junior colleges, colleges of technology, and professional training colleges



Source: Ministry of Education, Science and Culture, *School Basic Survey Report* and *Ministry of Education, Science and Culture Annual Report* for each year.

Figure 1. Change in the Number of Students Enrolled in Faculties of Science and Technology, and Reinforcement Plans

(*senmon gakko*).

II. Japan's Science and Technology Reinforcement Policies and Their Background

1. The Plan for Reinforcement of Training of Scientists and Engineers

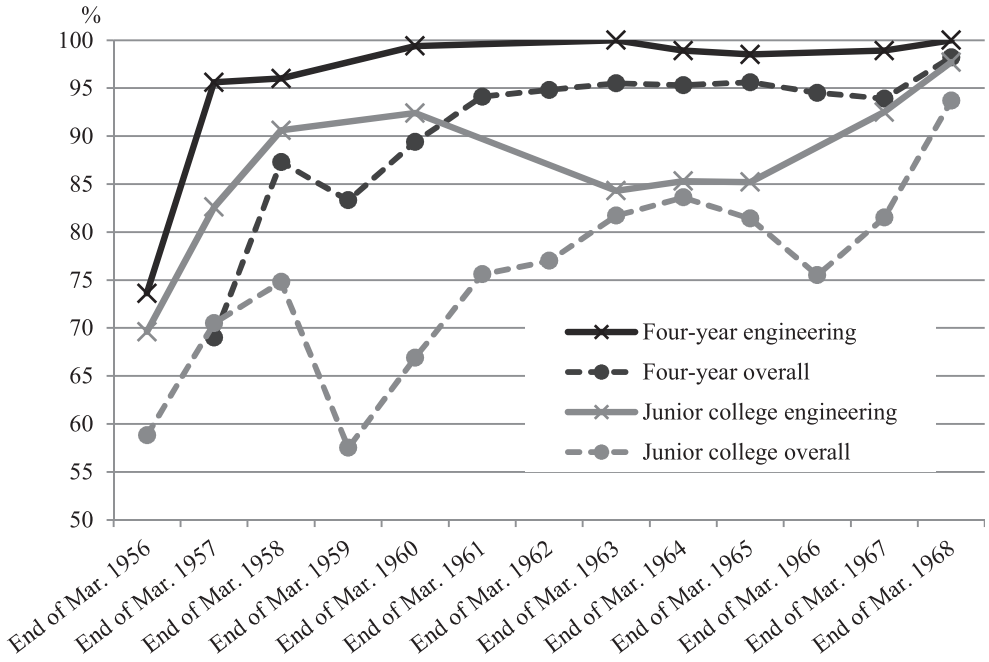
With regard to science and technology reinforcement during the high economic growth period, we should first of all examine the three plans for enhancement of higher education that were implemented. The first of these was a plan to boost science and technology student capacity by 8,000 people over four years starting in 1957, which we will refer to as "the 8,000-Student Plan." The second was a plan to increase capacity in the same fields

by 20,000 over three years starting in 1961 ("the 20,000-Student Plan"), and the third a four-year plan to drastically expand higher education overall, not only in the science and technology fields, from 1965 onward ("the Rapid Increase Plan.") As we shall see, these three plans were not completely responsible for the increase in the number of science and technology students that took place in Japan during this period, nor were they necessarily consistent with one another. However, it is indisputably true that these plans were the main driving force behind science and technology reinforcement during the high economic growth period.

The 8,000-Student Plan was the first large-scale plan to expand higher education after World War II, and there were various factors contributing to it. First of all, there was the direct impetus provided by public consensus that Japan needed better science and technology education, as illustrated by the statement from the Japan Federation of Employers' Associations quoted above. This consensus was reflected in the formation of public policy. In April 1957, the year following the Japan Federation of Employers' Associations statement, the National Diet (bicameral legislature) passed the Resolution on Improvement and Enhancement of Teacher Training Institutions and Promotion of Education and Research in Science, Mathematics and Natural Sciences (House of Representatives 1957) which included provisions for science and technology reinforcement, and a few days later the Minister of Education, Science and Culture submitted an inquiry entitled "Policies for Promotion of Science and Technology Education" to the Central Education Council (*Chuo Kyoiku Shingikai*) for deliberation, with a report on the Council's findings released in November 1957.

A second factor was the strong demand for science and technology graduates in the workforce, which helped shape the public consensus that Japan needed to promote science and technology more aggressively. Beginning around 1956, there was a rise in the job placement rate of graduates of engineering programs (Figure 2). At first, at least, this stood in great contrast to the job placement rate of humanities graduates, and served to highlight the demand for human resources in the sciences. The consensus was that steps needed to be taken to reinforce the sciences, whereas the humanities were widely viewed as being oversaturated (Itoh 1996). This is reflected in the Japan Federation of Employers' Associations statement, calling for "an intentional downsizing of law and humanities studies" as well as a pivot toward science and technology.

A third factor was the increasingly visible social issue of so-called *juken ronin*, students who had graduated from high school but were as yet unable to enter university because of failing entrance exams (Itoh 1996). Dubbed "masterless samurai," these young people began accounting for an increasing percentage of students entering university from about 1955 onward (Ministry of Education, Science and Culture 1964). Expansion of institutions of higher education came to be advocated as a means of alleviating the difficulty of entering university. Of course, this problem also reflected young people's increasingly strong desire to progress to higher education. Thereafter, throughout the high economic



Source: Ministry of Education, Science and Culture, *Annual Report* and *Monthly Journal* for each year/month.

Note: The job placement rate is the percentage of job seekers who are hired. However, it does not include students in teacher training, medical, dentistry, or marchant shipping programs. Data has been supplemented for years where data is lacking.

Figure 2. Job Placement Rate for University and Junior College Graduates

growth period, this intense demand for higher education underpinned the ongoing expansion of institutions of higher education.

A fourth factor was the increasingly robust state of the nation's fiscal health. In 1956, government spending began to increase, and would continue to do so throughout the 1960s.[1] 1957 was the height of the *zhinmu keiki* economic boom of 1950s Japan (Asai 2000, 76). Politicians were highly active in mediating on behalf of businesses seeking profits, and threw considerable political muscle behind the policy of constructing new institutions of higher education and expanding existing ones (Pempel 2004).

The 8,000-Student Plan, devised against the above-described backdrop, was characterized by coordination with the New Long-Range Economic Plan proposed by the government around the same time. The 8,000-Student Plan was intended as a means of cultivating the science and technology personnel required for realization of the economic growth called

[1] Ministry of Finance website (http://www.mof.go.jp/budget/reference/statistics/data.htm), accessed February 9, 2013.

Table 1. Contents and Outcomes of the 8,000-Student Plan and 20,000-Student Plan

			Total	National	Public	Private
8,000-Student Plan	Total (planned)	Number	8,000	4,000	1,000	3,000
		%	(100.0)	(50.0)	(12.5)	(37.5)
	Total (outcomes)	Number	7,961	4,456	125	3,380
		%	(100.0)	(56.0)	(1.6)	(42.5)
	Outcomes for each year	1957	1,152	647	0	505
		1958	2,401	1,716	0	685
		1959	2,787	967	40	1,780
		1960	1,621	1,126	85	410
	Success rate	%	99.5	110.9	12.5	112.7
2,000-Student Plan	Total (planned)	Number	20,600	11,440	760	8,400
		%	(100.0)	(55.5)	(3.7)	(40.8)
	Total (outcomes)	Number	20,663	7,140	743	12,780
		%	(100.0)	(34.6)	(3.6)	(61.8)
	Outcomes for each year	1961	3,220	1,790	165	1,265
		1962	11,150	2,580	210	8,360
		1963	6,293	2,770	368	3,155
	Success rate	%	100.3	62.4	137.2	152.1

Note: Prepared on the basis of the *1960 and 1962 Annual Report of the Ministry of Education, Science and Culture*. The "success rate" is the actual number as a percentage of the number in the plan. Figures in parentheses indicate share for each category of institution. The fiscal 1963 "outcomes" figures are projections for implementation. Breakdown data for universities, junior colleges, and colleges of technology has been omitted.

for by the New Long-Range Economic Plan. This plan covered the years through fiscal 1962, and it was predicted that 27,500 graduates of science and technology programs would be required that year, but if no steps were taken in the meantime, the number of such graduates would be only 19,500. The goal, therefore, was for national, public, and private universities and junior colleges to recruit the 8,000 students needed to fill the gap. Science and technology reinforcement was viewed as one aspect of a larger economic growth scheme, a phenomenon also seen in the National Income Doubling Plan and the 20,000-Student Plan, to be discussed later.

Table 1 shows the content and outcomes of the 8,000-Student Plan. It was originally a three-year plan covering fiscal 1958 through 1960, but in the final stage of formulation, the start was brought forward a year to 1957 and the overall length extended to four years.[2] I

[2] In October 1959, in the monthly journal of the Ministry of Education, Science and Culture, the ministry authorities refer to the plan as "a three-year plan starting in fiscal 1958" (Moroi 1959, 11), so it is thought that the extension of the plan was decided on after the end of 1959.

have been unable to uncover documentation of why this decision was made, but in any case the plan virtually reached its target, and it is possible that its period was extended when it became evident that it was not going to meet this target otherwise.

The plan succeeded in meeting 99.5% of its target, and the success rate exceeded 100% at national and private universities, but at public (non-national) universities was a mere 12.5%. The overall objective was thus achieved in a patchwork manner. At private universities, the Ministry of Education, Science and Culture (hereinafter referred to as Ministry of Education) subsidized two-thirds of the cost of establishing new faculties and departments of science and technology (Ministry of Education, Science and Culture 1960), but there is no evidence that similar support was provided to public universities. The poor performance of public universities may be due to the lack of such financial incentives. It is possible that there was pressure from the Ministry of Home Affairs, which tended to be reluctant to expand public institutions of higher education for fear of eroding prefectural and municipal finances.[3] In any case, the plan's outcomes illustrated the limitations of the government's (Ministry of Education's) proposed quantitative expansion policy, with neither public nor private universities smoothly following the plan. In other words, gaining the cooperation of educational institutions required sufficient incentives. Be that as it may, it must be noted that the success rates listed above refer to the amount by which *capacity* was increased, and the actual number of enrolled students differed radically. The increase in actual number of enrolled students between 1957 and 1960 was around 140% of the increase in capacity (11,162 students compared to a capacity increase of approximately 8,000) (Arai 1995). The over-capacity students were almost all enrolled at private universities, and it was this private university over-enrollment that enabled the plan to meet its target. Generally, based on the university establishment standards stipulated by the Ministry of Education, if student capacity is increased, there must be a corresponding increase in the number of instructors and facilities. However, with this over-enrollment—admitting a greater number of students while leaving capacity as is—there was no such need. Universities were able to boost the number of students without spending additional funds, which was an extremely appealing prospect especially to private universities that largely rely on income from tuition. The Ministry of Education turned a blind eye to this behavior on the part of private universities.

2. The National Income-Doubling Plan and the 20,000-Student Plan

After the 8,000-Student Plan drew to an end, a new proposal for further science and technology reinforcement was made. Demand for engineers was growing even more intense, as illustrated by the nearly 100% job placement rate among graduates from engineering

[3] Overall, the Ministry of Home Affairs tended to believe that establishment of universities was not really the duty of local or regional governments (Takahashi 2009). Later, the ministry communicated to the Ministry of Education that measures to fund public and private universities in connection to the Rapid Increase Plan (Jiji Press Internal/External Education Bulletin 1964).

programs (Figure 2). This time, the primary impetus for formulation of the plan came from outside the Ministry of Education's scope of administration. In October 1960, the Council for Science and Technology (*Kagaku Gijutsu Kaigi*) submitted an inquiry on "Basic Comprehensive Strategy for Promotion of Science and Technology over the Coming Decade," and the following month the Economic Council (*Keizai Shingikai*) submitted the National Income-Doubling Plan for deliberation. This plan was adopted by Cabinet decision the month after that (December 1960). Both the science and technology council's and economic council's proposals strongly emphasized the need for planned cultivation of specialist human resources, particularly engineers. Meanwhile, while these proposals were being deliberated, plans for training of engineers at institutions of higher education were being formulated within the Ministry of Education as well, and in autumn 1960 the ministry set the target of boosting science and technology student capacity by 16,000. Like the 8,000-Student Plan, this plan was linked with a broader economic plan. The number of engineers was predicted to fall 170,000 short of the number needed within the period of the National Income-Doubling Plan, and the idea was to boost science and technology student capacity by 16,000 over the seven years from 1961 to 1967, producing a cumulative total of around 70,000 more graduates during this period (Inumaru 1963).[4]

However, there was strong opposition to this plan within the government. In March 1961, Ikeda Shonosuke, the head of the Science and Technology Agency issued an "Advisory on the Cultivation of Scientists and Engineers" to the Minister of Education, which castigated the Education Ministry for a plan that "would not be able to produce even half the 170,000 additional engineers called for under the National Income-Doubling Plan, and could pose a tremendous risk to the promotion of science and technology in Japan and our nation's economic development." In addition, the advisory noted that not enough scientists and engineers could be trained at national universities alone, and urged reexamination of the role played by private universities, and relaxation of standards and procedures related to the expansion of private universities (Science and Technology Agency 1983, 100–101).

It was extremely unusual for such an advisory to be issued, but in this case there was strong pressure from private university-related individuals behind the scenes (Hashimoto 1996). In the end the Ministry of Education bowed to this pressure and assented to virtually all of the terms of the advisory, and thereafter (until the mid-1970s) there was sustained and unprecedented quantitative expansion of private university education with only limited government interference. Meanwhile, the above-described plan for increasing the number of science and technology students had to be modified, and the Ministry of Education raised its target from a 16,000-person to a 20,000-person capacity increase (this became the "20,000-Student Plan") and shortened its period from seven to four years, 1961 through

[4] According to Hiroshi Kida, then Chief, General Affairs Division of the Ministry of Education, the Ministry attempted to incorporate expansion of medical education into the plan as well, but the Ministry of Welfare and medical organizations fearing a surplus of doctors caused this strategy to be withdrawn (Amagi et al. 1993)

1964. This brought the cumulative number of graduates in these fields during the period to approximately 100,000, an increase of 30,000 from the original plan (Ministry of Education, Science and Culture 1964), the majority of which came out of private universities (Inumaru 1963). To achieve the target, government subsidization of both public and private universities was greatly expanded, as they frequently demanded drastically increased subsidies as a condition for their cooperation with the plan.[5] As a result, in addition to the expanded subsidization of private universities, government financing was applied to the low-interest loans to private universities provided by the Association for the Promotion of Private Schools (*Shiritsu Gakko Shinkokai*) and the scale of these loans was greatly expanded, with a new block of financing set aside for the reinforcement of science and technology. Also, new subsidies for public universities went into effect (Ministry of Education, Science and Culture 1963).

Thanks to all these measures, the 20,000-Student Plan met its target in only three years, a year ahead of schedule (bottom of Table 1). Overall the capacity increase was virtually 100% of the target, with national universities at approximately 60%, public universities around 140%, and private universities about 150% of their respective targets. There is a striking discrepancy between the low rate at national schools and the overachievement at public and private ones. The underperformance of national universities was due in part to budget cuts prompted by assessments by the fiscal authorities, but there were other factors. The 20,000-Student Plan had been expanded in scale due to outside pressure, and the Ministry of Education had never seen it as feasible to meet the target at national universities because of the challenges of training instructors and providing facilities and equipment. Meanwhile the national universities themselves, which tend to be highly concerned with maintaining quality, were not terribly enthusiastic about the plan.[6] By contrast, private universities raised capacity at approximately double the scale of their national counterparts, making up for the latter's underperformance and enabling realization of the overall target. Needless to say, the robust expansion at private universities was given momentum by the advisory from Ikeda Shonosuke (the head of the Science and Technology Agency) and the financial incentives.

As we have seen, these science and technology reinforcement plans implemented in the late 1950s and early 1960s were linked with economic plans and were essentially a part of Japan's manpower strategy, that is, "a policy of developing both quantitatively and quali-

[5] For example, Imazato (1961). However, private schools did not necessarily produce a united front, as outlined by Hashimoto (1996). Also, the expansion of subsidies to private schools was partly derived from concerns about decline in quality of education (ex., the Jiji Press Internal/External Education Bulletin [1961]).

[6] Budget requests for expansion of national universities were frequently slashed by the Ministry of Finance, but it is possible that requests were made with the knowledge that the eventual amount would be lower, so it is difficult to assess the effect of budget cuts. The statement that the Ministry of Education was reluctant to approve the expansion of the plan is based on the Japan Educational Press (1961).

tatively, and utilizing to the greatest extent, the full scope of Japan's manpower, which is the nation's greatest wealth and resource" (Arai 1995, 82). A similar attitude toward manpower was evident during the war (Itoh 1999), but the postwar policy was a much more substantial one. In particular, the National Income-Doubling Plan and the plan that supplemented it, set forth in a 1963 report entitled "Problems and Strategies in Manpower Development during Economic Growth," placed strong emphasis on educational reform, calling it the centerpiece that completed Japan's manpower strategy (Arai 1995). However, as we have already seen, in reality the process of expanding science and technology education in Japan was frequently a matter of piecing together the right numbers, and the Rapid Increase Plan we are about to examine is even further removed from actual manpower strategy.

3. Plan to Address a Rapid Increase in the Number of University Applicants

After the conclusion of the 20,000-Student Plan, the government was scheduled to propose a new science and technology reinforcement strategy (Inumaru 1963). However, in 1963, the year the 20,000-Student Plan came to an end, there was a growing problem besides the need for science and technology reinforcement, namely a rapid increase in the number of students applying to enter university. The postwar baby boom generation was poised to enter institutions of higher education in the years 1966 through 1968, and with this looming deadline, science and technology reinforcement was placed on the back burner and the "rapid increase issue" was brought to forefront of public policy.

At the beginning of 1963, the Ministry of Education formed an internal Higher Education Research Group and began deliberating on a strategy. In April of the following year it prepared an initial draft proposal entitled "Plan to Address a Rapid Increase in the Number of University Applicants," which proposed increasing capacity by 100,000 students. It was presented to national, public and private university organizations and the ruling Liberal Democratic Party (LDP), and in response the Japan Association of National Universities generally expressed support, while public and private university-related organizations said they would be unable to go along with the plan unless there were fundamental reforms to central government subsidy programs and the tax system. The LDP's Education Council appears also to have expressed strong concern that boosting capacity by 100,000 students would lower the quality of university education (Itoh 1996).

Based on this feedback, the plan was changed to a 67,500-person capacity increase over the years 1965-1966, laid out in the August 1964 proposal "Expansion and Development of Universities During Periods of Rapid Increase in Applicants" (top of Table 2). The plan was scaled back to about two thirds of the previous year's draft proposal. In terms of expansion plans for specific fields, at national universities the proposal called for "continuing to step up recruiting of science and technology students while expanding recruiting in other fields as well, such as the social sciences, maintaining a balance with science and technology," while at public and private universities no special provisions are mentioned (Higher Education and Science Bureau, University Section 1968, 73).

Table 2. Content and Outcomes of the Rapid Increase Plan (August 1964 and August 1965 Proposals)

(Unit: people)

				Total	Success rate	National	Success rate	Public	Success rate	Private	Success rate
August 1964 proposal	FY1965	Forecast	Capacity	27,000		4,400		1,600		21,000	
		Outcome	Capacity	17,694	(65.5)	2,234	(50.8)	350	(21.9)	15,110	(72.0)
			Enrollment	51,647	(191.3)	-	-	-	-	47,274	(225.1)
August 1965 proposal	FY1966	Forecast	Capacity	39,000		6,000		2,000		31,000	
			Enrollment	58,220						50,220	
		Outcome	Capacity	33,833	(86.8)	4,972	(82.9)	1,705	(85.3)	27,156	(87.6)
			Enrollment	70,530	(121.1)	-	-	-	-	62,870	(125.2)
	FY1967	Forecast	Capacity	25,300		4,000		1,300		20,000	
			Enrollment	37,700						32,400	
		Outcome	Capacity	24,240	(95.8)	3,985	(99.6)	460	(35.4)	19,795	(99.0)
			Enrollment	33,162	(88.0)	-	-	-	-	29,145	(90.0)
	FY1968	Forecast	Capacity	19,000		3,000		1,000		15,000	
			Enrollment	28,300						24,300	
		Outcome	Capacity	18,600	(97.9)	2,701	(90.0)	390	(39.0)	15,509	(103.4)
			Enrollment	24,696	(87.3)	-	-	-	-	19,388	(79.8)
	Total (FY1966-68)	Forecast	Capacity	83,300		17,400		5,900		87,000	
			Enrollment	124,220						106,920	
		Outcome	Capacity	76,673	(92.0)	11,658	(67.0)	2,555	(43.3)	62,460	(71.8)
			Enrollment	128,388	(103.4)	-	-	-	-	111,403	(104.2)

Note: Prepared on the basis of Tables 2 and 4 released by the Higher Education and Science Bureau, University Section. The "success rate" is the actual number as a percentage of the forecast. Forecasts and outcomes for actual enrollment (as opposed to capacity) at national and public universities are not known. The August 1964 proposal was for a two-year plan covering 1965–66, but the actual plan implemented in 1966 was one formulated in August 1965, so the 1964 proposal for 1966 is omitted here.

Despite already being scaled back, the Rapid Increase Plan did not get off to a good start, meeting only 66% of its target for the initial year, fiscal 1965. Universities were cautious about expanding, with national schools having had their budgets cut by the Ministry of Finance, while private ones waited to see how much government funding would be forthcoming (Itoh 1996). As a result, the plan had to be revised again, and a new plan proposed in August 1965 called for a capacity increase of 83,300 and an actual enrollment increase of 124,220 people over the three years from 1966 to 1968 (bottom of Table 2).

A unique aspect of this plan was that unlike previous ones, it took into account the chronic over-enrollment at private universities, and set a target for actual enrollment as well as capacity. This was no doubt due to the realization that it would be difficult to meet targets based on capacity alone, as illustrated by the outcomes shown on Table 2. However, the Ministry of Education was criticized for issuing a plan that depended on over-enrollment at private schools for success, in other words a plan that publicly sanctioned over-enrollment. In addition, the unprecedented scale of the expansion meant that subsidies and loans to public and private universities, particularly private ones, further strained the public coffers (Itoh 1996). Nonetheless, this funding was necessary in order to secure the universities' cooperation (incidentally, this paved the way for the launch of a full-fledged private school subsidization system in the 1970s.) I have been unable to uncover any documentary evidence of concrete expansion targets for specific fields under this plan.

The outcomes of the Rapid Increase Plan, as shown on the bottom of Table 2, were below target in terms of capacity and above target for actual enrollment. Here, as well, the actual enrollment figures at private universities (i.e. over-enrollment) made a major contribution to achievement of the plan.

Now, let us examine the relative weight assigned to science and technology during the Rapid Increase Plan period. Although it is not shown on the table, comparison of the number of students enrolling in science and technology programs between 1965 and 1969 shows an increase of around 25,000 students at universities and junior colleges, accounting for 19.7 (i.e. about one fifth) of the total increase in enrollment across all fields of specialization. This is a bit lower than the corresponding ratio for the 8,000-Student Plan and the 20,000-Student Plan, in which science and technology accounted for 25.4% and 28.9% of the increase respectively. However, the Rapid Increase Plan was large in scope and covered a long period of time, meaning that in terms of raw numbers this plan resulted in a greater increase in science and technology recruitment than the previous two plans had.

At the same time, while the Rapid Increase Plan did indeed produce a sustained increase in the number of science and technology graduates, it could no longer be called either a science and technology reinforcement strategy or a manpower strategy. In reality, as the job placement rates for graduates during this period illustrate, insufficient human resources had become a problem no longer limited to the science and technology fields (Figure 2). While in some quarters there was continued insistence that the number of humanities students was excessive, and this played a role in the downsizing of the Rapid Increase Plan

(Itoh 1996), the unprecedented employment boom meant that the issue of reinforcement of science and technology in particular tended to get lost in the shuffle. When the Rapid Increase Plan was being formulated, the Vice-Director General of the Higher Education and Science Bureau at the Ministry of Education had the following negative assessment of the methods for assessing human resources demand in specific fields, which had been employed in previous science and technology reinforcement strategies:

> ……It does not suffice to interpret society's needs purely from the vantage point of demand for particular vocations……In opening up the doors to institutions of higher education in response to the baby boom generation's coming of age, limiting expansion to faculties of science and engineering is not necessarily appropriate in light of the wishes and needs of individuals. (Murayama 1963, 42)

In this context, Japan's manpower strategy itself was losing a convincing reason for being.

Finally, let us examine science and technology reinforcement measures taken after the Rapid Increase Plan had concluded, through the mid-1970s. The end of the Rapid Increase Plan's term of implementation coincided with the peak of the campus strife that swept the nation. The number of students enrolling in science and technology programs continued to grow, but over the years from 1967 to 1970 its pace of growth slowed, probably as a result of these campus conflicts. In the 1970s it picked up steam again, but the momentum of expansion was less than it had been during the Rapid Increase Plan, and demand for human resources was showing signs of waning as well. With the coming of the recession in 1974, the era of growth in science and technology education drew to a close.

4. Advent of the "College of Technology" System

Here I would like to discuss a reform of the education system that relates closely to the cultivation of technical personnel. The "college of technology" system, established in 1961, had as its primary mission "the training of industrial engineers" (Ministry of Education, Science and Culture 1964, 102). The roots of this idea lay in the postwar educational reforms that united various types of higher education institutions under the old prewar system into all-inclusive "universities," which caused strong dissatisfaction in the business world, to the effect that the education system (without specialized technical colleges) was no longer producing enough "intermediate-level engineers." This problem became increasingly intertwined with another one: that of how to deal with junior colleges, a category hastily and provisionally created for institutions from the old system that did not meet the criteria for four-year universities under the new system.

By the late 1950s, the Ministry of Education had decided that it wanted to establish a new type of short-term, two- to three-year institution that emphasized vocational education, and in some cases was combined with high schools and also offered five- or six-year course terms, and to absorb "junior colleges" into this category. This policy was given shape in the "specialized colleges (*senka daigaku*)" bill submitted to the National Diet in 1958. However,

this bill met with fierce opposition from junior colleges, with private junior colleges in particular "protesting bitterly" (Kaigo and Terasaki 1969, 249). Not only did those involved in running junior colleges, which had originally been in the same category as four-year universities, consider the idea of being absorbed into a new category unacceptable, the character of this new category, with its emphasis on producing engineers, conflicted with the nature of most private junior colleges, which tended to be humanities-oriented or be women's colleges. In the end, the bill was submitted to the legislature three times but was defeated each time.

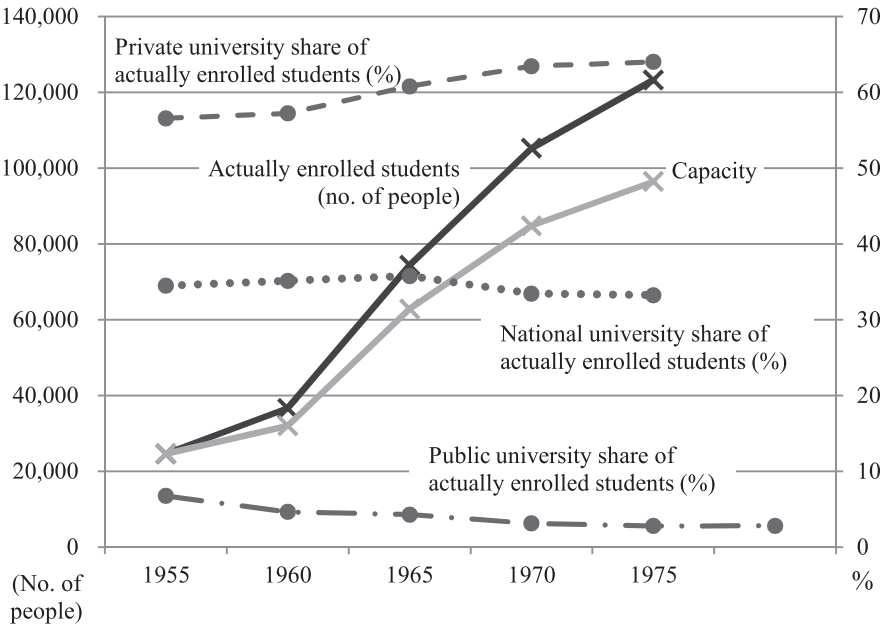
The need to cultivate scientific and technical personnel continued to grow, however, and the Ministry of Education set the issue of junior colleges aside for the time being and focused on the establishment of institutions for training intermediate-level engineers, and the first of the new "colleges of technology" opened in 1962. When the decision to launch the new system was made, nationwide recruitment efforts got underway. Initially things progressed smoothly, with 19 schools opening in the first year, and 16 more the following year (1963). These schools accounted for around one-fifth of the increased capacity achieved under the 20,000-Student Plan, more than twice the share held by junior colleges. However, this momentum did not last long. The number of students enrolled peaked in the early 1970s, and has declined slightly or remained flat ever since.[7] This was not only due to innate structural characteristics not conducive to quantitative expansion, namely specialization in science and technology and combination with a high school course, but also due to the dramatic expansion of four-year universities during the same period, which had the effect of marginalizing colleges of technology in a quantitative sense at least. Meanwhile, by 1964 the junior college system had been converted from its previous provisional status to a permanent one.

III. The Outcomes of Reinforcement Policies

Now, I will summarize the way higher education in science and technology changed as a result of the reinforcement strategies we have examined. Figure 3 shows the relevant figures for universities' undergraduate programs, junior colleges, and colleges of technology, as well as master's degree programs. While graduate schools were not included in the science and technology reinforcement plans we have discussed, during that period they were expanded considerably with the goal of training university instructors and so forth. In 1960 there were roughly 1,100 people enrolled in master's degree programs in science and technology, but this figure had octupled by 1975.

At higher education institutions overall, over the two decades from 1955 through 1975, capacity grew by a factor of 3.9 and actual number of students enrolled by a factor of

[7] The first through third years of colleges of technology are equivalent to the three years of high school, thus the figures examined ought to be the number of students enrolled from the fourth year onward. However, here the overall number of students enrolled at technical colleges is substituted.



Source: Ministry of Education, Science and Culture, *School Basic Survey Report, Universities List, Junior Colleges List* and *University Materials* for each year.

Note: As the number of students enrolled in master's degree programs for the 1955 academic year is unknown, actual enrollment figures for that year are not included in calculations. The number of students actually enrolled is probably several hundred to several thousand people higher.

Figure 3. Capacity and Actual Enrollment in Science and Technology Programs, and Share by Category of Institution (Total for Master's Degree Programs, Undergraduate Faculties, Junior Colleges and Colleges of Technology)

4.9. Over-enrollment at private universities led to a sustained discrepancy between these two figures. It was during the 1960s that growth in enrollment was most pronounced. Examining the breakdown by category of institution, private universities accounted for around 60% of growth and grew in a steady, sustained manner, while national universities accounted for about 35% and showed a slight decline in growth rate over time. Public universities continued to show negligible growth over the period. Though the figures are not shown on the chart, faculties (university undergraduate programs) accounted for an overwhelming share of the growth, though their share was brought down from just under 90% to just under 80% by the introduction of colleges of technology. Junior colleges and colleges of technology accounted for about 10%, though their share declined over time, while graduate programs were in the single-digit percentages but showed sustained growth. In short, faculties at private universities were the linchpin of efforts to reinforce science and technology education. While expansion of capacity and enrollment at national universities was considera-

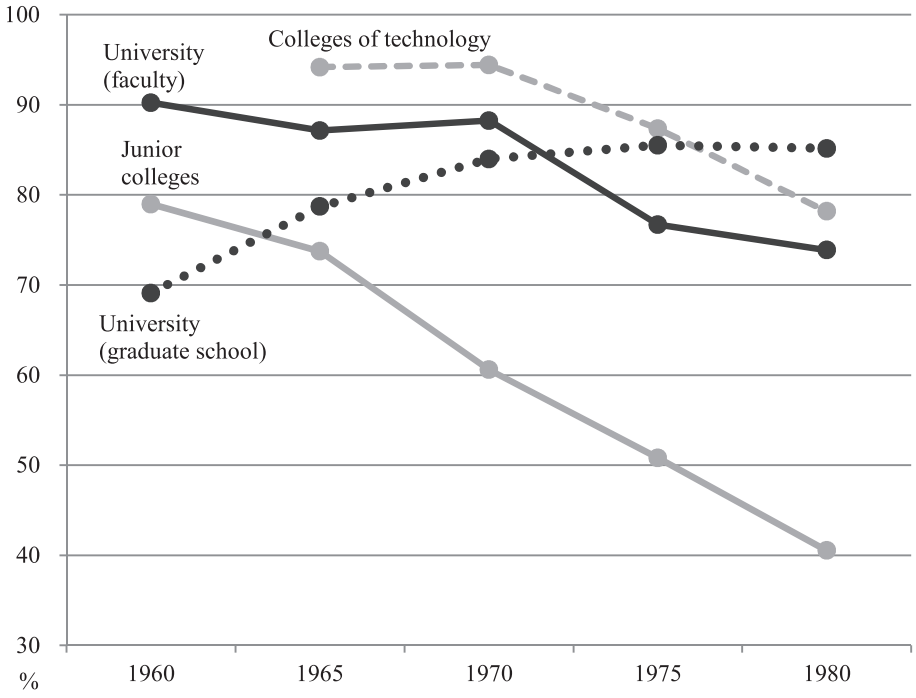
ble, looking at the big picture, private universities played a central role and their energy drove overall expansion.

Within the fields of science and technology, which specific areas saw expansion? This issue has not been examined thus far, but based on the trends in engineering fields at the undergraduate level examined by Saizu and Yano (1996), there was little change over the 1955–1975 period in the percentage of science and technology student capacity accounted for by the four major engineering fields (mechanical engineering, electrical engineering, construction engineering, and applied chemistry): over 70% at national universities and around 85% at private universities. At national universities, the sciences were compartmentalized in these four categories, while at private ones newly established faculties were primarily in the same four categories. Over the same period, there were four categories that continually dwindled (mining engineering, metallic engineering, textile engineering, and marine engineering), while three new categories saw growth especially from 1960 onward (information engineering, biological engineering, and materials engineering). While this transition occurred, there was little change to the overall structure of specialized fields (Saizu and Yano 1996).

What was the response of the labor market? As previously mentioned, the job market for graduates was astoundingly good. Although it is almost unimaginable considering the situation today, during the 1960s there were many years when the job placement rate for graduates of faculties of engineering was 100% (Figure 2). For graduates of other faculties, the overall job placement rate during the 1960s stayed above 90%, but engineering was a particularly strong field. For graduates of junior colleges, as well, while the overall rate is lower than that of four-year universities, the job placement rate for engineering was particularly high. Though it is not shown on the chart, the job placement rate for college of technology graduates was also extremely high, approaching 100%. Science and technology graduates were avidly embraced by the labor market. In the early 1970s, their employment situation stayed comparatively strong, if not as strong as it had been during the 1960s. It was in 1974 that Japan was suddenly plunged into an employment "ice age."[8]

What percentage of job seekers found jobs as technical personnel? Figure 4 shows the percentage of engineering program graduates that found jobs in fields high in technical personnel, namely manufacturing, construction, transport and communications. Data is provided through 1980 in consideration of year of graduation. With the exception of master's degree recipients, the percentage of people finding jobs in these fields trended downward from the 1970s onward. This trend was particularly pronounced among junior college graduates, and appears earlier. By contrast, the percentage of master's program graduates finding

[8] According to a Nikkeiren survey of companies' plans for hiring of college graduates, carried out every year, the number of people scheduled to be hired dropped for a time in 1972 after economic reforms were instituted by US President Richard Nixon, but temporarily recovered, before being drastically reduced with the advent of the recession in 1974 (Report of the Institute of Labour Administration).

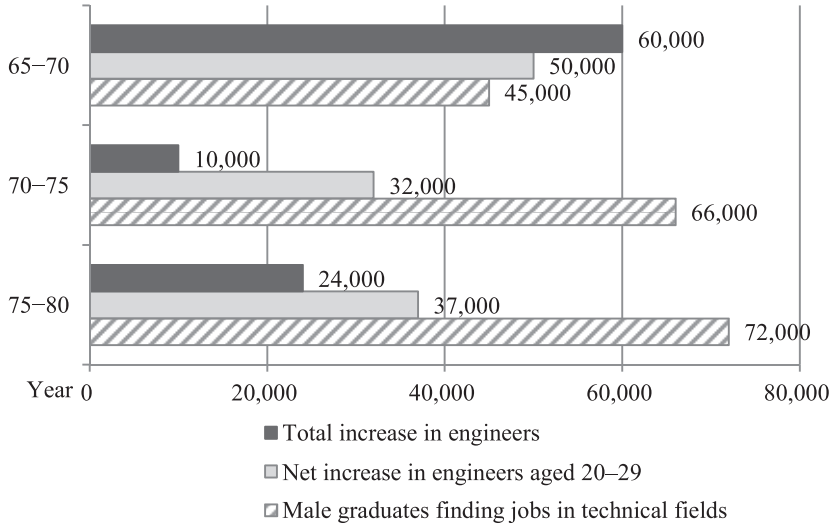


Source: Ministry of Education, Science and Culture, *School Basic Survey Report* for each year.

Figure 4. Job Placement Rates in the Manufacturing, Construction, Transport and Communications Fields (Percentage of All Graduates of Engineering Programs)

jobs in manufacturing stayed steady from the 1970s onward, and it is evident that the cultivation of engineers found a stable base in this population.

An analysis of the same subject by Kobayashi (1996) using different data exists. Kobayashi compared the increase in number of engineers (of all ages, and aged 20–29) derived from population censes and the number of male graduates finding jobs in technical fields (Figure 5). First of all, it is evident that over 1965–1970 the majority of growth in the number of engineers consisted of growth among university graduates, and growth in number of engineers can be seen as an outcome of reinforcement of science and technology in higher education. However, from 1970–1975 and from 1975–1980, the rise in overall number of engineers was much smaller, and there was only a pronounced rise among engineers aged 20–29. This means that this increase was the result of demand for young engineers to replace retiring workers, rather than an increase in the number of positions. In addition, the rise in the number of science and technology graduates was much greater than the increase in the number of young engineers, making it likely that there was "an over-supply of university-graduate engineers" (Kobayashi 1996, 246). As we have seen, reinforcement of



Source: Kobayashi (1996, 264, fig. 2–6–2). Some data omitted. Original data can be found in the *Population Census* and the *School Basic Survey Report*.
Note: "People finding jobs in technical fields" includes jobs in the sciences and agricultural science. Figures are for a period of one year.

Figure 5. Change over Time in Number of Engineers and Number of Persons Finding Employment

science and technology in higher education greatly contributed to swelling the ranks of engineers in the 1960s, but from the 1970s onward, while there was turnover as older engineers retired and new ones were hired, an increasing number of science and technology graduates went on to non-engineer positions.

Finally, let us take a look at the relationship between science and technology reinforcement and Japan's "industrial location policy." As is well documented, during the period of science and technology reinforcement we have been examining, many actions were taken to implement this "industrial location policy." In 1960, the Economic Council designated the "Pacific Belt Zone" as part of the National Income-Doubling Plan, and the 1962 Comprehensive National Development Plan (which can be seen as a revision of the 1960 plan) called for a "growth pole strategy." In these plans there are some references to configuration of departments at institutions of higher education in response to regional needs, and to prevention of over-centralization in urban areas. However, there is little if any evidence that higher education institutions' locations of establishment were clearly linked to national development plans.

However, the prevention of over-concentration of institutions of higher education in cities had been viewed as an issue since before the war, and during the high economic growth period as well, the Law Concerning Restriction on Factories, etc. in Existing Ur-

banized Areas of the Metropolitan Region (i.e. the Tokyo region) was passed in 1959 and a similar law passed in 1964 with respect to the Kansai region. In these core urban areas, new universities could not be established, and there was a prohibition on constructing classrooms over 1500 square meters in size. However, these restrictions were not limited to the science and technology fields, and the prohibition on large classrooms "had loopholes, as small classrooms could be constructed and meeting rooms, seminar rooms, etc. could be connected to form larger facilities" (Kuroha 1989, 35). It was not until after 1975 that full-fledged decentralization measures were put in effect.

The process of establishing national colleges of technology is perhaps most indicative of the relationship between location policy and institutions of higher education. The 1962 annual report of the Ministry of Education speaks of "petitions for construction of national colleges of technology in 29 locations in 22 prefectures of Japan," and "based on considerations including industrial location-related conditions, overall regional balance of the nation, measures for securing teaching personnel, and frameworks for regional cooperation, 12 schools will be opened in 1963, and five more in 1964" (page 26). Over the four years after the launch of the system, however, 43 colleges of technology were established in most prefectures, with the exception of those in the vicinity of major cities. Amid fervent demand for opening of new schools, political considerations regarding regional balance won out over the concerns of industrial location. In other words, there is no more than a highly tenuous relationship between science and technology reinforcement measures and the "industrial location policy."

IV. Conclusion

In closing, I will enumerate the insights gained from this research.

- The beginning of Japan's reinforcement of science and technology coincided with the start of the high economic growth period. Naturally, this reinforcement was underpinned by strong demand for human resources accompanying economic growth, and by robust finances, but it was also backed by strong public consensus. Science and technology reinforcement was carried out through three recruitment plans, the 8,000-Student Plan, 20,000-Student Plan, and the Rapid Increase Plan. Of these, the first two were linked to comprehensive national economic plans, and could be described as manpower strategies aimed at achieving economic growth. The Rapid Increase Plan, on the other hand, was not limited to one specific field, but it actually resulted in more pronounced science and technology reinforcement than the earlier two.
- However, none of these plans were implemented smoothly, and the process of shoring up science and technology had complicated aspects. Even amid a period of outstanding economic growth, in some quarters there was a deep-rooted view that the education system was bloated. Also, while things proceeded more or less according to plan at national universities, plans were often rejected by the fiscal authorities, and universities

themselves tended to be reluctant to expand for fear of lowering the quality of education. At the same time, it was extremely difficult for the government to regulate the quantitative scale of public and private universities. Private universities were extremely eager to expand, but unwilling to do so without financial support from the government. The government responded to private universities' frequent tactical maneuvers by providing the support requested, and also turned a blind eye to over-enrollment at private universities, which was a loophole that enabled them to expand without incurring costs. Both of these were necessary in order to achieve the plans' aims.

- It can be said that the success of science and technology reinforcement depended on both private universities' avid desire to expand and on young people's strong desire to progress to higher education. This can be said of postwar higher education in general (Itoh 2013), and science and technology during the high economic growth period were in line with overall trends.
- The issue of science and technology reinforcement was also related to the reform of the higher education system. There were many voices expressing dissatisfaction with the one-track postwar education system and calling for institutions that trained engineers in the manner of prewar professional colleges. However, the colleges of technology eventually established, through a tortuous process, ended up playing only a very minor role from a quantitative standpoint. Despite the above-mentioned debate, it was newly established undergraduate-level faculties of science and technology that played a central role, and junior colleges and colleges of technology were marginalized, quantitatively at least, with the exception of the increasingly prevalent master's degree programs.
- The number of science and technology students approximately quintupled over the years 1955–1975. This growth was primarily driven by private universities, and took place largely at the undergraduate level. Within science and technology overall, the structure of individual fields of specialization remained solid, and there was little change to the major categories that dominated it. Amid consistently strong demand for human resources throughout the high economic growth period, the job placement rate for science and technology program graduates was particularly high, and over the 1960s the reinforcement of science and technology fed demand for engineers. In the 1970s, however, the technical job market grew oversaturated, and graduates branched out into other fields. Through all this, there was only a highly tenuous relationship between science and technology reinforcement measures and the national development plans.

As we have seen, the cultivation of engineers during the high economic growth period can be viewed as a product of the extremely favorable and never-to-be-repeated conditions that prevailed during this period. Today, with higher education, the job market, and Japanese society as a whole radically transformed, what lessons can we derive from the history of the high economic growth period? It is to be hoped that it has practical implications for us today, rather than merely being a segment of history or a snapshot of "the good old days" for us to

reminisce on.

One of these implications relates to the difficulty of developing human resources in a planned manner, which the process of science and technology reinforcement we have been examining illustrates extremely clearly. The policy implementation process was made even more complicated by private universities, which in Japan hold a much stronger power than we generally believe. The phenomenon of numerous actors playing intertwining roles in implementing a plan is one that we can see taking place today as well. Another lesson to be learned relates to the high expectations placed on education during the high economic growth period, which today is recurring as Japan faces the need for cultivation of globally viable human resources. In terms of what education can and cannot do to meet the needs of society, there are lessons to be learned from Japan's period of high economic growth.

References

Amagi, Isao, Hiroshi Kida, Bunichiro Sano, Hitoshi Osaki, Ryoichi Kuroha, and Ikuo Amano. 1993. Sengo daigaku seisaku no tenkai [The development of postwar university policy]. *IDE* 351.

Arai, Katsuhiro. 1995. Manpawa seisaku to rikokei daigaku kyoiku no kakudai [Manpower strategy and the expansion of science and technology education at university]. In *Tsushi Nihon no kagaku gijutsu* [Historical overview of science and technology in Japan], vol. 3, ed. Shigeru Nakayama, Ikuo Goto and Hitoshi Yoshioka. Tokyo: Gakuyosha.

Asai, Yoshio. 2000. "Shin choki keizai keikaku" to kodo seicho shoki no keizai sangyo seisaku [The new long-range economic plan and economic and industrial policy in the early years of the high economic growth period]. Green paper, no.25, The Institute for Economic Studies, Seijo Universiy, Tokyo.

Hashimoto, Koichi. 1996. Koto kyoiku seisaku to shiritsu daigaku no kakudai kodo [Higher education policy and the expansion actions of private universities]. In *Gakushu shakai ni okeru masu koto kyoiku no kozo to kino ni kansuru kenkyu* [Research on the structure and functions of mass higher education in an academic society], Research report no. 91, ed. Ikuo Amano and Keiichi Yoshimoto. Tokyo: Hoso Kyoiku Kaihatsu Senta.

Higher Education and Science Bureau, University Section, ed. 1968. Daigaku nyugaku shigansha kyuzo taisaku [Plan to address a rapid increase in the number of university applicants]. In *Daigaku shiryo* [University materials], no. 29. Tokyo: Ministry of Education, Science and Culture.

House of Representatives. 1957. *Dai 26 kai kokkai shugiin kaigiroku* [Minutes of the 26th assembly of the National Diet House of Representatives], no. 35, April 23.

Imazato, Jin. 1961. Gijutsu yoin yosei wo meguru hamon [Effects of the cultivation of technical personnel]. *Jiji Press Internal/External Education Bulletin*, May 9, 1961.

Inumaru, Tadashi. 1963. Kagaku gijutsu kyoiku no shinko [Promotion of science and tech-

nology education]. *The Monthly Journal of Ministry of Education*, no. 1027.

Itoh, Akihiro. 1996. Koto kyoiku daikakuchoki no seisaku tenkai [Development of policy during major expansion of higher education]. In *Gakushu shakai ni okeru masu koto kyoiku no kozo to kino ni kansuru kenkyu* [Research on the structure and functions of mass higher education in an academic society], Research report no. 91, ed. Ikuo Amano and Keiichi Yoshimoto. Tokyo: Hoso Kyoiku Kaihatsu Senta.

———. 1999. *Senkanki Nihon no koto kyoiku* [Higher education in interwar Japan]. Tokyo: Tamagawa University Press.

———. 2013. Daigaku taishuka he no katei [The process of massification of universities]. In *Taishuka suru daigaku* [Massificating universities], Series University vol. 2, ed. Teruyuki Hirot, Aya Yoshida, Hiroshi Kobayashi, Takahiro Ueyama and Junko Hamanaka. Tokyo: Iwanami Shoten.

Japan Educational Press. 1961. *Nihon kyoiku nenkan 1962 nenban* [1962 Annual report on Japanese education]. Tokyo: Japan Educational Press

Japan Federation of Employers' Associations. 1983. Shinjidai no yosei ni taio suru gijutsu kyoiku ni kansuru iken [Opinions on technology education to meet the needs of a new era]. In *Sengo Nihon kyoiku shiryo shusei* [Collection of historical documents of postwar Japanese education], vol. 5, ed. Sengo Nihon kyoiku shiryo shusei henshu iinkai [Committee for Collection and Editing of Historical Documentation of Postwar Japanese Education]. Originally, publicized in 1956 by the Japan Federation of Employers' Associations. Tokyo: Sanichi Shobo.

Jiji Press Internal/External Education Bulletin. 1961. Shidai Rikokei gakubu no teiinzo [Increase in capacity in private university faculties of science and technology]. June 9.

———. 1964. Koritsudai no zaisei sochi ha fuhitsuyo [Fiscal support measures for public universities are unnecessary]. September 18.

Kaigo, Tokiomi, and Masao Terasaki. 1969. *Daigaku kyoiku* [University Education]. Tokyo: University of Tokyo Press.

Kobayashi, Shinichi. 1996. Rikokei bumu to gijutsusha yosei [The science and technology boom and training of engineers]. In *Gakushu shakai ni okeru masu koto kyoiku no kozo to kino ni kansuru kenkyu* [Research on the structure and functions of mass higher education in an academic society], Research report no. 91, ed. Ikuo Amano and Keiichi Yoshimoto. Tokyo: Hoso Kyoiku Kaihatsu Senta.

Kuroha, Ryoichi. 1989. Senzenki kara no daigaku ricchi seisaku no hensen [The evolution of university location policy from the prewar period]. *Journal of University Studies*, no.4.

Ministry of Education, Science and Culture. 1958. *Showa 33 nendo. Kuni to chiho no bunkyo yosan* [Fiscal 1958. National and regional culture and education budget]. Tokyo: Ministry of Education, Science and Culture.

———. 1963. *Showa 38 nendo. Kuni to chiho no bunkyo yosan* [Fiscal 1963. National and regional culture and education budget]. Tokyo: Ministry of Education, Science

and Culture.

———. 1964. *Wagakuni no koto kyoiku* [Higher Education in Japan]. Tokyo: Ministry of Education, Science and Culture.

Moroi, Kanichi. 1959. Kyoiku seido ni taisuru sangyokai no yobo [Demands of industry regarding the education system]. *The Monthly Journal of Ministry of Education*, no. 986.

Murayama, Matsuo. 1963. Bebi bumu to daigaku [The baby boom and universities]. *The Monthly Journal of Ministry of Education*, no. 1030.

Pempel, T. J. 2004. *Nippon no koto kyoiku seisaku (Patterns of Japanese policymaking: Experiences from higher education)*. Trans. Koichi Hashimoto. Tokyo: Tamagawa University Press.

Saitsu, Yasushi, and Masakazu Yano. 1996. Kogakukei kyoiku no kakudai katei to koto kyoikku seisaku [The process of expanding technical education and higher education policy]. In *Gakushu shakai ni okeru masu koto kyoiku no kozo to kino ni kansuru kenkyu* [Research on the structure and functions of mass higher education in an academic society], Research report no. 91, ed. Ikuo Amano and Keiichi Yoshimoto. Tokyo: Hoso Kyoiku Kaihatsu Senta.

Science and Technology Agency. 1983. Kagaku gijutsusha no yosei ni kansuru kankoku [Advisory on the cultivation of scientists and engineers]. In *Sengo Nihon kyoiku shiryo shusei* [Collection of historical documents of postwar Japanese education], vol. 7, ed. Sengo Nihon kyoiku shiryo shusei henshu iinkai [Committee for collection and editing of historical documentation of postwar Japanese education]. Originally, publicized in 1961 by Science and Technology Agency. Tokyo: Sanichi Shobo.

Takahashi, Hiroto. 2009. 20 seiki Nihon no koritsu daigaku [Public universities in 20th century Japan]. Tokyo: Nihon Tosho Senta.

Japanese-Style Human Resource Management and Its Historical Origins

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This paper examines the economic rationality of Japanese-style human resource management (HRM) and provides an overview of how and in what historical context Japanese firms formed such a model, which had no precedent in the Western world. The core of the Japanese model is an employer's promise to provide human capital investment and employment security to regular employees in exchange for their dedication and skill formation, so as to achieve high productivity. However, this "exchange" is not a legally binding contract but merely an implicit one, and for it to constitute a s*elf-enforcing* equilibrium, complementary HRM policies—such as internal promotion and joint labor-management consultations—must also be instituted.

With this in mind, this paper defines the Japanese-style HRM model as consisting of *seven* key policies that complement one another, and traces their historical origins by making use of a wealth of preceding research. The process can be divided into four phases: the inter-war period (1914−37) during which leading firms in heavy industry explored new labor policies; the wartime period (1938−45) with heavy military intervention; the turbulent period of fierce labor-management conflict immediately after WWII (1946−55); and the first half of the period of high economic growth (1956−65) during which HRM was combined with productivity improvement.

All phases were important in shaping the Japanese HRM model, but the seven key policies did not come together to form a stable equilibrium until the final phase. During this period, Japanese-style HRM became an engine for economic growth "by the middle class for the middle class," and brought the nation a rare combination of affluence and equality. The lifetime employment became institutionalized since the end of the high growth period and continues to impact Japanese society, both positively and negatively, to this day.

I. Introduction

In 21st-century Japan, as we are accustomed to media reports of "the collapse of the lifetime employment," many of us seem to dismiss such practices as a relic of the past. However, it is worth emphasizing that the incentive mechanisms that underlie Japanese-style human resource management (HRM) are economically rational and have universal appeal. Despite journalistic and anecdotal accounts, rigorous empirical studies have shown that most large Japanese firms maintained long-term employment for their core workers over the "lost decade" of the 1990s (Shimizutani and Yokoyama 2009; Ono 2010; Kato and Kambayashi 2011; Hamaaki et al. 2012). Also, Japanese manufacturers have successfully transplanted Japanese-style HRM to overseas factories, most notably in Southeast Asia (Koike 2012). In the US, the Japanese model came to be known as "innovative" HRM practices and continues to inspire researchers and managers worldwide (Levine 1995;

Pfeffer 1998).

Although there is a large volume of case studies in the field of organizational behavior and managerial economics that suggests the importance of personnel management, it has been difficult to measure the *causal* effects of HRM practices on firm performance. Since the 1990s, however, with advances in personnel economics we have much better theoretical and empirical understanding of why and how personnel practices matter. In particular, recent studies have shown that the choice of HRM practices has a major impact on productivity (Ichniowski, Shaw, and Prennushi 1997; Lazear 2000; Hamilton, Nickerson, and Owan 2003).

In light of these advances, this paper aims to define what constitutes Japanese-style HRM and examine its economic rationality. At the core of the Japanese model is an employer's promise to provide human capital investment and employment security to all regular employees, including both white-collar and the blue-collar workers, in exchange for their dedication and skill formation (Dore 1973; Koike 1988). However, this "exchange" is not a legally binding employment contract but merely an implicit contract. For this to form a *self-enforcing* equilibrium, an employer must institute a set of complementary policies, such as a system of internal promotion and joint labor-management consultations (Moriguchi 2003; Moriguchi and Ono 2006). With this in mind, this paper defines the Japanese-style HRM model as a set of *seven* key policies that complement one another, and provides an overview of why, when, and in what order Japanese firms developed these HRM policies. The paper concludes with a discussion of the positive and negative consequences of Japanese-style HRM and their implications.

II. Economic Rationality of the Japanese-Style HRM Model

In the 1980s, major Japanese manufacturing firms such as Toyota, Nissan, Toshiba, Hitachi, and Nippon Steel had grown highly competitive and made great inroads into US and European markets. In the US automobile industry, where the mass production system had been invented, Ford and GM were greatly surprised to discover the "flexible" mass production system developed by Toyota and the uniqueness of the underlying HRM methods. As the key to the high productivity of Japanese manufacturers, Japanese-style employment practices came to receive a great deal of attention from overseas researchers and practitioners (Cusumano 1985; Cole 1989; MacDuffie 1995; Helper and Henderson 2014).

Drawing inspiration from Japanese practices, US scholars have since advocated a set of HRM policies named "innovative HRM practices" (also known as "high performance work practices" in the literature). Let us refer to these policies as the US-style innovative HRM model, to be contrasted later with the Japanese-style HRM model. It consists of the following seven policies in the areas of hiring, training, compensation, job design, employment security, labor-management relations, and employee status (Levine 1995; Pfeffer 1998; Ichniowski et al. 1997).

The US-Style Innovative HRM Model
(1) Selective hiring of new workers
(2) Extensive company training
(3) Incentive pay
(4) Flexible job assignments and small-group activities
(5) Non-layoff pledge
(6) Information sharing between labor and management
(7) Reduced status distinctions across employee levels

Many Japanese readers may wonder what is "innovative" about this model. For that we must compare and contrast these practices with the traditional HRM policies pertaining to blue-collar workers in American firms (Brown and Reich 1989; Moriguchi 2005), which can be summarized as follows.

The US-Style Traditional HRM Model
(1) Minimal screening in hiring
(2) Little company training
(3) Job-based wages
(4) Narrowly defined jobs and rigid job assignments
(5) Frequent layoffs and limited job security based on seniority rights
(6) Non-cooperative labor-management relations
(7) Major status distinctions between white-collar and blue-collar employees

In other words, the traditional HRM model adopted by US manufacturing firms not only included *none* of the seven policies of the innovative HRM model, but in fact stood in stark contrast to it.[1] In this sense, the innovative model proposed in the 1990s was truly revolutionary to most US firms.

Even though the US-style innovative HRM model was inspired by the Japanese model, the two are not the same. To see how they differ, let us review the features of the Japanese model. According to the textbook description, it consists of three pillars: seniority wages, lifetime employment, and enterprise unionism. Unfortunately, this is merely a superficial description that does not convey the underlying incentive structure. At the heart of the Japanese-style HRM model lies an implicit promise of human capital investment and employment security to all regular employees, including not only white-collar but also blue-collar workers. The managerial objective is to solicit employees to accumulate firm-specific skills that enhance productivity, but to realize this goal, management on one

[1] The traditional HRM model in the US can be characterized as an explicit (and thus legally enforceable) employment contract based on mutual distrust between labor and management. See Moriguchi (2003, 2005) for a historical analysis of how HRM policies in the US and Japan diverged in the 1930s after the Great Depression.

hand must design and motivate employees' skill formation, and labor on the other hand must monitor management so it does not break its promises.

In large Japanese firms, employers hire new personnel all at once through annual recruitment of new graduates. Throughout their careers, employees receive extensive in-house training and education combined with regular job rotations. Employers institute a system of periodic pay raises, bonuses, and internal promotion, all of which is based (not only on seniority but) critically on performance evaluation by supervisors. As Koike (1988) emphasizes, these policies make not only white-collar workers, but also production workers on the shop floor accumulate a broad set of intellectual skills and take part in small-group activities to improve productivity. However, generally speaking, higher productivity leads to labor redundancy that increases managerial incentive to reduce the workforce; knowing this, workers have no incentive to cooperate in productivity improvement. As such, the promise of "lifetime employment"—to be precise, the implicit understanding between labor and management that the firm will not dismiss regular employees before they reach retirement age—is the linchpin of the Japanese-style HRM model. To enforce such an implicit and long-term employment contract, enterprise union (consisting exclusively of regular employees), information sharing, mutual monitoring, and joint consultations between labor and management play a vital role in the Japanese model.

To summarize, the Japanese-style HRM model comprises the following seven policies that are complementary to one another:

The Japanese-Style HRM Model
(1) Selective once-a-year recruitment of new graduates
(2) Extensive company training and education
(3) Periodic pay raises and internal promotion based on evaluations
(4) Flexible job assignments and small-group activities
(5) Employment security until the age of mandatory retirement
(6) Enterprise union and joint labor-management consultations
(7) Unified personnel management of white-collar and blue-collar employees

When we compare the US-style innovative HRM model and the Japanese-style HRM model, it is clear that the intent of each policy is the same. They differ, however, in specific policy designs: the former is more general and loosely worded, whereas the latter is more specific, thorough, and detailed. As we shall see, such Japanese-style practices as the hiring of new graduates *en masse*, enterprise unions, and the unified management of white-collar and blue-collar employees are the products of historical conditions that were unique to Japan. In other words, we can view the US-style innovative HRM model as a simplified version and a popular edition of the Japanese model that captures its essence.

As one might expect, the rise of alternative HRM models has attracted much scholarly attention. With advances in personnel economics, there have been both theoretical and

empirical explorations of the effectiveness of a variety of personnel policies. In particular, a number of theoretical studies analyzed the incentive mechanisms that underlie the Japanese model and their economic rationales (e.g., Lazear 1979, Aoki 1986, Itoh 1991, Kandel and Lazer 1992, Carmichael and MacLeod 1993, Morita 2005, Kato and Owan 2011). They show that the strength of the Japanese model comes from the empowerment of lower-level employees on the shop and store floor and the effective use of local knowledge they possess to generate "bottom-up" innovations. Its efficiency rests critically on the importance of firm-specific human capital that cannot be readily acquired from the external labor market. The Japanese-style HRM model is therefore not an optimal choice for every Japanese firm.

Empirically, does the choice of HRM policies actually matter? Although many studies have documented correlations between personnel practices and firm performance, they fell short of identifying *causal* effects due to the problems of endogeneity and selection bias. Ichniowski, Shaw, and Prennushi (1997) were the first to identify the effects of the innovative HRM model on productivity, using detailed micro panel data from the US steel industry. According to their results, the adoption of the seven innovative HRM policies caused a major increase in productivity, but the adoption of an individual policy in isolation had no significant effect. In other words, their study was also the first to empirically confirm the complementarity of HRM policies. Since then, a growing body of empirical research has shown the effectiveness of the innovative HRM model in a variety industries and countries, including the US, Japan, the UK, Germany, Denmark, Spain, and Italy.[2]

III. Historical Origins of the Japanese-Style HRM Model

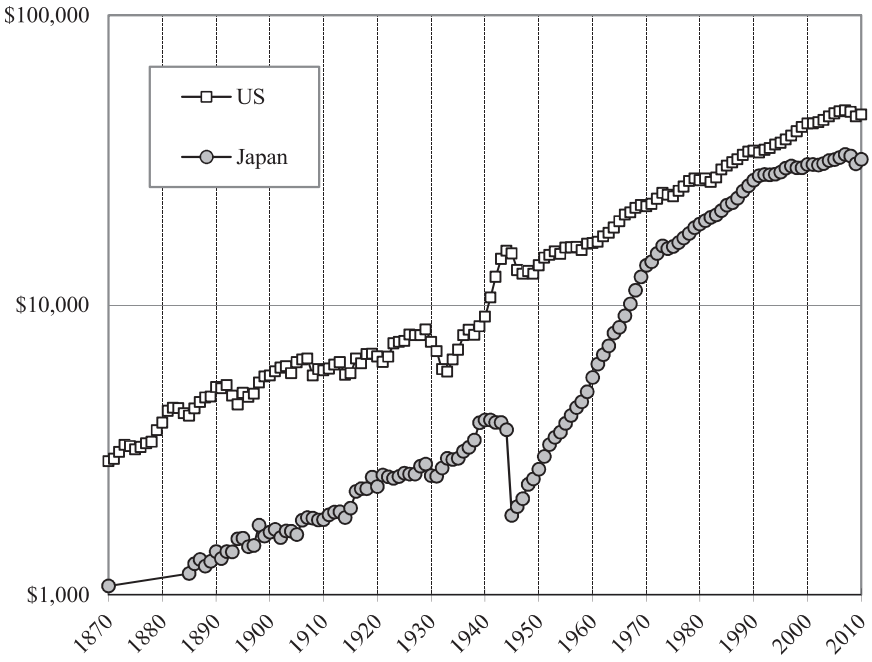
So far, we have observed that the Japanese-style HRM model is economically rational and that its key ideas have diffused internationally under the name of innovative HRM practices. Why did Japanese firms develop such a model, which had no precedent in the Western world? In what order, and under what historical circumstances, did the seven HRM practices come into existence?

Fortunately, there is a wealth of preceding research on the history of personnel management and labor relations in Japan.[3] Below, to explore the historical origins of the Japanese model, I make full use of the great classic work by Andrew Gordon (1988) and the new outstanding work by Shinji Sugayama (2011), in addition to my own research.

The history of the Japanese-style HRM model can be divided into four phases: the period from World War I through the beginning of World War II (1914−1937), during which

[2] For example, see Jones and Kato (1995), Ohkusa and Ohtake (1997), Cappelli and Neumark (2001), Kato and Morishima (2002), Hamilton, Nickerson, and Owan (2003), Bartel (2004), Black and Lynch (2004), Zwick (2004), DeVaro (2006), and Jones and Kato (2011).

[3] Excellent research includes, but is not limited to, Showa Dojinkai (1965), Hyodo (1971), Hazama (1978), Odaka (1984), Nishinarita (1988), Gordon (1988), Sugayama (2011), and Koike (2012).



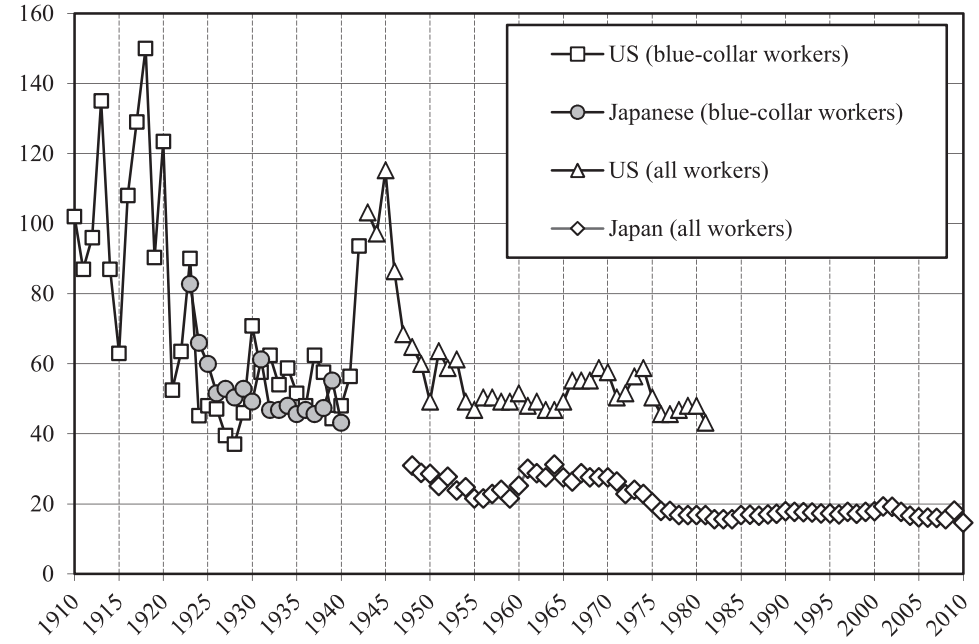
Sources: US: Williamson (2014); Japan: Maddison (2003) updated to 2010.
Note: GDP per capita in each country is expressed in 2000 dollars.

Figure 1. Real GDP per Capita in Japan and the US, 1870–2010

leading employers in heavy industry began experimenting with new personnel policies; the wartime period (1938−1945), during which heavy regulations were imposed on the labor market, with mixed results; the turbulent years of labor-management confrontation after WWII (1946−1955), during which status distinctions between blue-collar and white-collar workers were abolished; and the first half of the postwar period of high economic growth (1956−1965), during which HRM was combined with productivity improvement. All phases were important in shaping the Japanese model, but it was not until the high economic growth period that the seven key policies came together to form a stable and self-enforcing equilibrium.

To give a long-run overview, Figure 1 presents real GDP per capita in Japan and the US from 1870 to 2010 (expressed in 2000 US dollars). Industrialization in Japan began in earnest in the 1880s and per capita income grew from 1890 to 1937 at a rate higher than that in the US. Japanese GDP per capita fell sharply during WWII, but grew at the average annual rate of 7% between 1946 and 1973. The living standards of the Japanese continued to improve during the period of stable growth after the 1973 oil crisis and came close to the US level at the height of the bubble economy in 1992. The annual growth rate in Japan has declined to 0.5% in the subsequent two decades.

Figure 2 presents the annual turnover rate of manufacturing workers in Japan and the



Sources: US: Brissenden and Frankel (1920) for 1910–1918; Berridge (1929) for 1919–1929; US Department of Labor, *Employment, Hours, and Earnings*, for 1930–1981. Japan: Nihon Rodo Undo Shiryo Iinkai (1959) for 1923–1938; Ohara Shakai Mondai Kenkyujo (1964) for 1937–1940; Japan Ministry of Health, Labour and Welfare, *Monthly Labour Survey*, for 1948–2010.

Note: The turnover rate is defined as the number of workers who leave an establishment divided by the total number of workers in the establishment. The number and size of establishments as well as the types of workers in a survey differ across sources. For both Japan and the US, the data before 1943 cover only blue-collar workers in the manufacturing sector, whereas the data from 1943 and on cover both white-collar and blue-collar workers.

Figure 2. Annual Turnover Rates of Manufacturing Workers in Japan and the US, 1910–2010

US from 1910 to 2010, as a measure of the instability of employment relations. It represents the ratio of the number of workers who leave an establishment each year (including both voluntary resignations and involuntary dismissals) to the total number of workers in the establishment. Note that the rates are not directly comparable across countries and pre- and post-1943 periods due to differences in data definitions. According to the figure, the turnover rate of factory workers fell substantially in Japan during the 1920s. The turnover rate in the US also declined in the inter-war period, reflecting similar changes in personnel policies at major American firms that encouraged long-term employment (Moriguchi 2003). Although no data are available for Japan during WWII, according to Cohen (1949), like in the US, the turnover rate rose sharply in Japan despite mobility controls imposed by the wartime government. By the late 1940s, however, the turnover rate of Japanese workers had

fallen to a level far below that of US workers (no data for US are available after 1981). After a temporary increase in the early 1960s, the turnover rate in Japan declined to less than 20% in the 1970s and stayed low through the 1990s and 2000s. It is of great interest to investigate the formation of HRM policies that underlie this long-run trend.

1. Employment Practices during the Early Industrial Period (1880–1910)

Let us begin the historical analysis by examining employment practices at factories during the early days of industrialization in the Meiji Period (1868–1912).[4] As Gordon (1988) vividly describes, Japanese working-class society today could not be more different from that of 1900. First, there was a highly competitive and fluid labor market. Second, there was a *de facto* class system within a firm where management drew sharp status distinctions between white-collar staff and blue-collar workers. Furthermore, in contrast to what we tend to imagine, Meiji-era factory workers were neither hardworking nor dedicated, nor were they loyal to any employer. These differences underscore the fact that Japanese-style HRM is not a continuation of traditions that date back to the early modern era, but a new system that emerged in the course of modernization.

At the turn of the 20th century, the labor market in Japan was active, fluid, and highly competitive. Employment relations in the workplace were short-lived due to both frequent resignations and dismissals, regardless of the size and ownership of the firm. Even in large state-owned factories, the average length of tenure was less than a year. It was the norm among skilled male workers to move frequently from one workplace to another to acquire new skills and earn higher wages. They were known for their self-reliance and footlooseness. At factories, the management of blue-collar workers was delegated to foremen who held much authority in hiring and firing, job assignments, and supervision. When the need arose, foremen hired workers from the external labor market, assigned several tasks in a short trial period, and determined wages according to their skill and experience. There was no wage penalty for workers who were hired mid-career. When business slowed, foremen were quick to dismiss workers. These observations suggest that during the early days of industrialization, there was little firm-specific component in the skills of blue-collar workers.

Before World War II, Japanese employers made clear distinctions between the status and treatment of white-collar and blue-collar workers. As Sugayama (2011) documents, at the end of the 19th century, not just blue-collar workers but also white-collar workers (including engineers, technicians, and managers) changed jobs frequently in the course of their career development. Early in the 20th century, to secure talented personnel for white-collar positions, large firms began to recruit new graduates of higher education institutions. To retain them and instill loyalty, management introduced such policies as periodic pay raises,

[4] Much of the description in this subsection draws on Gordon (1988, chap. 1), and Sugayama (2011, chap. 1).

end-of-term bonuses, paid sick leave, company cafeterias, and company housing. These benefits, however, were offered exclusively to white-collar staff, as management instituted separate sets of rules and policies pertaining to white-collar and blue-collar employees.

Most notably, while the workplace rules for white-collar workers were concise and abstract, those for blue-collar workers were extremely detailed line-by-line stipulations of what to do and what not to do, complete with the prescription of punishments for the infringement of these rules. For example, blue-collar workers were made to enter and leave the workplace through different gates from white-collar staff, and were subjected to body searches by security guards. Such treatment mirrored a widely shared view among employers that production workers were "an uneducated, undisciplined, indolent, unruly, and untrustworthy lot." It must be noted, however, that this derogatory view was not entirely unwarranted at the turn of the twentieth century. In fact, lower-level managers and engineers were regularly tormented by factory workers who arrived late, left early, or took absences without permission, were abusive if not violent in word and deed, and refused to obey supervisors' instructions.

To summarize, during the early days of industrialization, employment practices at large firms were characterized by: (1) year-round hiring of skilled workers as needed, (2) no in-house training, (3) day-to-day job assignments by a foreman, (4) competitive wages paid according to workers' skill and experience, (5) short employment duration due to frequent resignations and layoffs, (6) mutual distrust between workers and management, and (7) sharp distinctions in the status and treatment of blue-collar and white-collar workers. In short, not one of the constituent elements of the Japanese-style HRM model existed at the turn of the 20th century.

2. New Employment Policies during the Inter-War Period (1914−1938)

In the early decades of the 20th century, with the rise of capital-intensive industry, Japanese firms grew larger, employing hundreds of workers.[5] Leading employers in heavy industry, such as Mitsubishi Shipbuilding, Hitachi Engineering Works, Shibaura Engineering Works (present-day Toshiba), Sumitomo Metals, and Nippon Kokan (present-day JFE Steel), began attempting to improve the discipline, morale, and efficiency of factory workers. To foster future foremen and line leaders, major firms launched an in-house apprenticeship program and carefully selected a small number of teenage boys newly graduated from school and trained them at company facilities. To encourage them to stay with the company, management also offered semiannual pay raises and prospects of internal promotion. However, even at these firms, the number of in-house apprentices was extremely small, and the vast majority of blue-collar workers were experienced factory hands hired mid-career.

[5] The description in this subsection draws on Gordon (1988, chaps. 4–6), Odaka (1984), Sugayama (2011, chap. 3), and Moriguchi (2000).

It was World War I (1914–1918) that triggered major changes in labor management at Japanese factories. Facing unprecedented labor shortages caused by war demand, manufacturing firms sought to retain skilled and semi-skilled workers by introducing employment policies that had previously applied only to white-collar or elite blue-collar workers, including semiannual pay raises, bonuses for attendance and long service, severance pay (the amount of which was reduced in the case of voluntary resignation), and various company benefits. However, many of these policies were shortsighted responses to the wartime boom, and many employers subsequently scaled back or abolished their policies. Nonetheless, through the process of trial and error, by the late 1930s among leading heavy industrial firms, there emerged a set of HRM policies that aimed to promote diligence and long service among male factory workers.

However, as Gordon (1988) points out, even at the pioneering firms, the implementation of HRM policies during the inter-war period was arbitrary, erratic, and inconsistent. Most importantly, management encouraged long-term employment when times were good, but in a recession they made major layoffs and let go even skilled employees with long service, contradicting their own policy. For another example, periodic pay raises were by design based on performance evaluations, and were given not to all but to a selected few who demonstrated outstanding merit. Both the amount of the pay raise and the fraction of blue-collar workers receiving any raise were much smaller than those of white-collar staff. Moreover, the daily wages to which the periodic pay raise applied typically made up less than half of the take-home pay of factory workers, and the rest was paid at a piece rate. What is more, in the absence of clear criteria, supervisors held great discretion in determining who would receive a raise, to the dismay of workers. When business slowed, management could and did postpone periodic pay raises indefinitely.

These limitations notwithstanding, at leading firms, wages of blue-collar workers began to show positive correlations with their length of service for the first time during the inter-war period (Odaka 1984). There was a notable decline in the separation rate of manufacturing workers in the 1920s, especially at large establishments. These observations indicate that new HRM policies probably had some effect in reducing labor turnover of blue-collar workers.

Even though the new HRM policies in the inter-war period included some key elements of the Japanese-style HRM model, it is important to note that they did not constitute a self-enforcing equilibrium (Moriguchi 2003). The greatest problem was that management had sole discretion in implementing the policies, and that there was no mechanism for blue-collar workers to monitor management and check their opportunism. During this period, Japanese workers had no right to strike or bargain collectively, and there were no laws to protect labor unions. This is not to say that workers were entirely powerless. In fact, from the late 1910s to the mid 1920s, there was a surge in the labor movement in Japan, and the number of labor unions was on the rise. To preempt unionization, leading firms instituted factory committees (a form of employee representation), where blue-collar workers for the

first time were given the opportunity to communicate with management and voice their opinions. Most notably, when employers resorted to large-scale dismissals during the economic downturns in the 1920s, blue-collar workers in major firms *fought* against them, suggesting that these workers were beginning to value employment security. While the workers were unable to prevent the dismissals, they were often successful in reducing the number of dismissals or increasing the amount of severance pay. These oppositions were the precursor of the great anti-dismissal struggles in the early 1950s that played an important role in establishing employment security in the post-WWII era.

Another reason why the HRM policies in the inter-war period were ineffective was the deep-rooted mistrust between blue-collar workers and management. Even though management extended the application of HRM policies that encourage long-term employment to blue-collar workers, in reality, there was a huge gap in the implementation of these policies between white-collar and blue-collar workers. For example, end-of-term bonuses for white-collar workers were regularly more than 10 times those of their blue-collar counterparts. The sharp status distinctions between blue-collar and white-collar workers were firmly entrenched and made it difficult for blue-collar workers to develop any sense of corporate loyalty.

To summarize, during the inter-war period, leading employers in heavy industry instituted: (1) annual recruitment of a small number of new graduates, (2) an in-house apprenticeship program for elite blue-collar workers, (3) more systematic job assignments, and (4) periodic pay raises and bonuses pertaining to blue-collar workers. However, there continued to be (5) mass dismissals in an economic downturn, (6) mutual distrust between blue-collar workers and management despite the establishment of factory committees, and (7) large disparities between the status and treatment of white-collar and blue-collar workers.

3. Military Interventions during World War II (1938−1945)

During World War II, to maximize wartime production, the military government intervened heavily in all aspects of the Japanese economy, including the labor market, personnel management, and labor relations.[6] While there are detailed official records of the ordinances and regulations that the government issued, there are few records that document their actual impact on the behavior of management and workers. Some historians argue that military interventions had a major impact in shaping the Japanese-style employment system, pointing to similarities between the regulations stipulated and Japanese-style practices, while others see little impact, arguing that, even with an authoritarian government, it was difficult (or even counterproductive) to coerce employers and workers to comply with the regulations that were incompatible with their incentives. The truth lies somewhere in between these two views.

[6] The description in this subsection draws on Cohen (1949), Moriguchi (2000), Sumiya (1971), Gordon (2012, chaps. 7–8), and Sugayama (2011, chap. 3).

For example, to secure manpower, the wartime government imposed a series of mobility controls that effectively prohibited factory workers in strategic industries from changing employers. Even though the government issued a variety of measures to enforce these regulations, workers continued to find loopholes and moved among factories (Cohen 1949). Therefore, it is unlikely that wartime mobility controls had a permanent effect in reducing the turnover rate of blue-collar workers.

It is also important to note that many of the wartime labor regulations were modeled after the HRM practices developed by leading firms during the inter-war period. In the process of drafting ordinances, bureaucrats studied private-sector practices as a possible model or revised their drafts when meeting opposition from business leaders, so as not to undermine existing employment practices. In these cases, the wartime regulations did little to change the HRM policies of major firms but instead institutionalized their policies as the industry standard.

For example, to train skilled workers, the government issued an ordinance in 1939 to make it mandatory for all factories in strategic industries with 200 or more workers to establish corporate apprenticeship programs, modeled on the practice at major firms.[7] As Sumiya (1971) documents, however, no more than 1,500 firms nationwide actually instituted a program as directed, and even at these firms, the program lost substance as the war situation deteriorated. By the end of WWII, there were only a few of the largest firms providing training to workers. These observations indicate that it is too simplistic to conclude that corporate training diffused widely among Japanese firms due to military regulations.

Let us turn to wage controls. To protect the livelihood of factory workers and boost wartime production, the government imposed a series of wage regulations starting in 1939. Among other things, the government established minimum wages according to the age and gender of workers and made periodic pay raises mandatory for all employees, which increased the seniority component in the determination of wages. Although management lost their discretion to give periodic pay raises to selected employees, the laws permitted the amount of pay raises to vary according to employee performance, preserving a critical aspect of the incentive structure. Case studies show that many firms revised their wage policies to comply with the regulations. This suggests that, unlike mobility controls, wage controls had a large effect on firm policies and standardized wage structures across firms.

However, these regulations did little to reduce the unequal treatment of white-collar and blue-collar employees, and gave it *de facto* approval by allowing management to maintain separate wage rules. The same was true of an establishment-level committee of the Patriotic Industrial Association established under government initiatives to promote la-

[7] It is worth noting that US government also made worker training mandatory during WWII, but in contrast to the case in Japan, it took the form of industry-wide training programs. This is consistent with the observation that, in the US, company training at major firms had declined after the New Deal labor reforms of the 1930s and industrial unions had taken root before WWII (see Moriguchi 2000).

bor-management cooperation. It was the first organization that brought blue- and white-collar workers together as "equal members" of an enterprise. In reality, however, it did not produce tangible results, and elevating the status of blue-collar workers remained merely an ideal.

To summarize, under the wartime regulations, at large Japanese manufacturing firms, (1) new school graduates were allocated through public employment agencies, (2) the establishment of company apprenticeship programs became mandatory, (3) periodic pay raises were mandated to all employees, (5) strict mobility controls were imposed, (6) employee organizations consisting of blue-collar and white-collar workers were introduced, and (7) the equal status of white-collar and blue-collar workers was upheld as an ideal. However, the effectiveness of the regulations varied widely by area. In some cases, the regulations played a role in spreading HRM practices at leading firms to a wider segment of the economy.

4. Labor-Management Confrontation in the Turbulent Postwar Years (1945−1955)

Immediately after Japan's surrender in 1945, the nation was placed under the indirect governance of the Allied powers, which launched a series of democratic reforms, including the dissolution of *zaibatsu* and the protection of labor rights.[8] Japanese workers began organizing unions with unprecedented speed and energy. At first, white-collar and blue-collar employees spontaneously formed separate unions at their establishment. Under the slogan of "democratization of management," however, the two unions soon merged to form what they called an employee union. Newly established unions forcefully demanded the equal treatment of all employees, and the status distinctions between white-collar and blue-collar employees were finally abolished. As Sugayama (2011) emphasizes, this was a vital and decisive step toward the "white-collarization" of blue-collar workers, which is one of the most remarkable features of the Japanese-style HRM model.

While management was paralyzed by economic disorder and political turmoil, many employee unions won extremely favorable contracts that stipulated generous wage increases, company benefits, and employment guarantees. They also won a provision that required every regular employee of a company to be a union member, and in exchange, management won a clause requiring every union member to be an employee of the company. This exclusive employee membership later became a hallmark of enterprise unionism. Labor's initial victory, however, was soon challenged by management's counteroffensive.

In 1949, the Allied powers adopted a drastic deflationary policy, plunging the economy into a sharp recession. Unions fiercely opposed rationalization plans, demanding complete withdrawal of proposed mass dismissals. A sense of mutual mistrust between labor and management loomed large. The most violent labor disputes in Japanese history took place in

[8] The description in this subsection draws on Moriguchi and Ono (2006), Gordon (1988, chaps. 9–10), and Sugayama (2011, introduction, chap. 3).

1949–1954, involving major firms such as Toshiba, Hitachi, Toyota, and Nissan. In almost all major strikes, management eventually prevailed. During long disputes, radical union leaders lost support from core employees, who instead formed new and more moderate unions. Management concluded an agreement with the moderate unions, expelled the radical leaders, and carried out rationalization in consultations with the moderate unions. During the process, unions learned a hard lesson that unrestrained demands would undermine financial viability of the firms, while management learned that unilateral dismissals could provoke very costly labor disputes. The moderate unions laid the foundations for enterprise unionism that took root among large firms during the 1950s.

Contrary to popular belief, there is no statutory law that guarantees employment security in Japan, as the labor laws uphold employers' right to dismiss employees. By the 1960s, however, it was common for Japanese employers to circumvent dismissals through a variety of means, such as reduction of hours, relocation of regular employees, dismissals of temporary workers, and solicitation of voluntary retirement. In the absence of legal enforcement, what compelled management to protect employment of regular workers?

In exchange for their cooperation with management in rationalization, enterprise unions demanded employment security of their members as their first priority. No explicit contractual guarantee, however, was found in union contracts. Instead management and unions at large firms introduced joint labor-management committees in the 1950s to facilitate information sharing and prior consultations on important personnel matters. During business downturns, unions monitored managerial behavior and cooperated in transferring employees and soliciting early retirement if necessary. Enterprise unionism thus became a central internal enforcement mechanism for employment security and played an important role in establishing mutual trust between labor and management.

To summarize, during the decade following the end of WWII, three key HRM policies emerged: the equal treatment of blue-collar and white-collar employees, enterprise unions consisting exclusively of regular employees, and long-term employment. As a result, by the mid-1950s, six of the seven policies that comprise the Japanese-style HRM model were in place, forming a *self-enforcing* equilibrium for the first time. However, these HRM policies were not yet combined with small-group activities, and without this, the economic rationality of the Japanese-style HRM model remained precarious.

5. Japanese-Style HRM in the High Growth Period (1955−1973)

From 1955 to 1973, Japan experienced a sustained period of high economic growth (Figure 1). This was the period during which Japanese firms began to gain a long-term perspective and make serious investments in their employees for future returns.

The term "small-group activities" refers to a team of employees on the shop or store floor exercising direct control over everyday decision-making and problem solving to

achieve high quality.[9] This was a key innovation and the most studied aspect of the Japanese-style HRM model. The origins of quality management can be traced to the method of statistical quality control (SQC) developed in the US, which was to be used by engineers and not by rank-and-file workers. SQC was introduced to Japan in the 1950s and, in a remarkable turn of events, transformed into a total quality control (TQC) movement that involved *all* employees in productivity improvement.

Although there were many factors behind this development, the elevated status of blue-collar workers, employment security, and cooperative labor-management relations that large Japanese firms had in place by this time were major contributing factors. In promoting small-group activities, management began to provide extensive employee training and education, especially in the form of on-the-job training (OJT) combined with regular job rotations. In the 1960s, small-group activities such as QC circles spread rapidly and OJT became common practice among Japanese manufacturing firms.

Even in the 1950s, large firms routinely hired skilled mid-career workers as temporary workers when needed, and promoted some of them to regular employees. These firms also recruited new middle school graduates for blue-collar positions, but they continued to be a minority well into the 1960s. In the late 1960s, however, a drastic rise in high school attendance led to a sharp decline in the number of middle school graduates entering the labor market, causing a severe labor shortage at a time of rapid economic growth. As leading firms began recruiting high school graduates (who had previously been hired as white-collar workers) for blue-collar positions, they curtailed the hiring of mid-career workers and started a practice of periodic recruitment of new graduates en masse.

The resulting increase in the education level of the blue-collar workforce further raised the incentive for management to provide training and promote small-group activities. With more educated blue-collar employees, major firms developed a new and more sophisticated wage system in which wages were determined according to an employee's ability to perform a job (to be distinguished from job performance itself). Both white-collar and blue-collar employees were awarded periodic pay raises and internal promotions based on their job performance ability as evaluated by their supervisors. The new wage system reduced the seniority component and increased the skill component in wage determination, giving workers greater incentive to accumulate firm-specific human capital. It also separated wages from the actual job performed and enabled more flexible job assignments and broader job rotations. The new wage system was thus complementary to company training and small-group activities.

To summarize, by the late 1960s, large manufacturing firms brought together the seven policies of the Japanese-style HRM model: (1) selective annual hiring of new graduates, (2) extensive company training and education, (3) periodic pay raises and internal

[9] The description hereafter draws on Cole (1989), Gordon (2012, chap. 11), which was written exclusively for the Japanese edition of Gordon (1988), and Sugayama (2011, chap.5).

promotions based on job performance ability, (4) flexible job assignments and small-group activities, (5) employment security until retirement age, (6) enterprise union and joint labor-management consultations, and (7) unified personnel management of white-collar and blue-collar workers.

IV. Concluding Discussion

As we have seen, the Japanese-style HRM model was formed gradually through half a century of interactions between management and workers, at times confrontational and at other times cooperative. While the process was guided by economic rationality in principle, it was also affected by unique historical events, such as the great labor shortages during WWI, the heavy military interventions during WWII, and the far-reaching democratic reforms under the Allied occupation. Through these events, Japanese firms developed a set of elaborate and interdependent HRM policies that had no parallel in Western nations. The Japanese-style HRM model, which promises human capital investment and employment security to all regular employees to elicit bottom-up innovations and high productivity, became an engine for economic growth "by the middle class for the middle class" and brought a rare combination of affluence *and* equality to postwar Japan. This is in sharp contrast to the early years of industrialization where economic growth was accompanied by rising income inequality (Moriguchi and Saez 2008).

If this was one of the greatest fruits that Japanese-style HRM has borne, there also were costs, as it brought about other forms of social and economic inequality. Because workers in heavy industry have historically been male, the model was applied exclusively to male workers, which encouraged gender-based division of labor in Japanese society where married women were expected to stay home and support male breadwinners. The dedication and long working hours required to be a full member of a Japanese firm became a major hindrance for females to take part in the system. As human capital investment was concentrated on regular workers in large firms, it created significant wage disparities between large and small firms as well as between regular and non-regular employees within the same firm. This, in turn, created intense competition among new school graduates to secure their first jobs, creating "winners" and "losers" among job seekers, with lasting impact. As new graduates moved directly from school to firm and rarely reentered the labor market, their career paths became mono-track and standardized, leaving little room for diversity or experiment. All of these factors cast a long shadow over Japanese society to this day.

Moreover, since the oil crisis in 1973 that marked an end to the high growth period, with the formation of social norms, case laws, and government regulations, Japanese-style HRM became increasingly institutionalized and rigidified (Moriguchi and Ono 2006). Under the favorable conditions of the high growth period (1955–1973), the Japanese model had spread over the much greater segment of the economy, including smaller-sized firms and non-manufacturing firms. Japanese workers and their families began to take "lifetime

employment" for granted and society began placing high priority on employment security. Most notably, when dismissals due to deteriorating business conditions became a major issue during the oil crises in the 1970s, the Supreme Court made a decision to restrict employers' right to dismiss employees. The courts thus provided *legal* enforcement for long-term employment to a certain degree and extended this practice to non-union firms and small-sized firms throughout the economy. In addition, the government issued various measures to protect employment of regular workers, starting with subsidies for firms to maintain their workforce. These domestic developments weakened the incentive structure embedded in the Japanese-style HRM model, just when it began to draw the world's attention as the secret of the high productivity.

As we have observed in Section II, compared to US-style innovative HRM policies, the Japanese-style model is more elaborate, specific, and demanding. However, to implement its key ideas and achieve high productivity, it does not have to go so far as to restrict regular employment to male Japanese workers, to recruit only new graduates once a year, to standardize the career path of all regular employees, or even to guarantee lifetime employment. These quintessentially Japanese practices are not inherent to the economic logic, but are the outcomes of unique historical conditions that were subsequently institutionalized. By contrast, training and education, small-group activities, and a certain degree of employment security are central to the Japanese model.

In other words, firms have a considerable degree of freedom to design their own Japanese-style HRM model, or not to choose the Japanese model at all for that matter. Rather than adhering to inherited practices, it may be fruitful for each firm to revisit their economic rationales and experiment to find its own "innovative" HRM policies. From this standpoint, recent experiments among Japanese firms to broaden the definition of regular employees, for example to allow them to have shorter working hours or more limited range of job assignments but with equivalent provision of human capital investment and employment security, is an excellent example of creating a more diverse and flexible Japanese-style HRM model.

References

Aoki, Masahiko. 1986. Horizontal vs. vertical information structure of the firm. *American Economic Review* 47, no. 5:571–83.

Bartel, Ann. 2004. Human resource management and organizational performance: Evidence from retail banking. *Industrial and Labor Relations Review* 57, no. 2:181–203.

Berridge, William. 1929. Labor turnover in American factories. *Monthly Labor Review* 29, no. 1:62–65.

Black, Sandra, and Lisa Lynch. 2004. What's driving the new economy? The benefits of workplace innovation. *Economic Journal* 114, no. 493: F97–F116.

Brissenden, Paul, and Emil Frankel. 1920. Mobility of labor in American industry. *Monthly*

Labor Review 10, no. 6:1342–62.

Brown, Clair, and Michael Reich. 1989. When does union-management cooperation work? A look at NUMMI and GM-Van Nuys. *California Management Review* 31, no. 4: 26–44.

Cappelli, Peter, and David Neumark. 2001. Do "high-performance" work practices improve establishment-level outcomes? *Industrial and Labor Relations Review* 54, no. 4:737–75.

Carmichael, Lorne, and Bentley MacLeod. 1993. Multiskilling, technological change and the Japanese firm. *Economic Journal* 103, no. 416:142–60.

Cohen, Jerome. 1949. *Japan's economy in war and reconstruction*. Minneapolis: University of Minnesota Press.

Cole, Robert. 1989. *Strategies for learning: Small-group activities in American, Japanese, and Swedish Industry*. Berkeley: University of California Press.

Cusumano, Michael. 1985. *The Japanese auto industry: Technology and management at Nissan and Toyota.* Cambridge, MA: Harvard University Press.

DeVaro, Jed. 2006. Teams, autonomy, and the financial performance of firms. *Industrial Relations* 45, no. 2:217–69.

Dore, Ronald. 1973. *British factory – Japanese factory: The origins of national diversity in industrial relations*. Berkeley: University of California Press.

Gordon, Andrew. 1988. *The evolution of labor relations in Japan: Heavy industry, 1853–1955*. Cambridge, MA: Harvard University Press.

———. 2012. *Nihon roshi kankeishi 1853−2010* [History of labor-management relations in Japan]. Trans. Kazuo Nimura. Tokyo: Iwanami Shoten.

Hamaaki, Junya, Masahiro Hori, Saeko Maeda, and Keiko Murata. 2012. Changes in the Japanese employment system in the two lost decades. *Industrial and Labor Relations Review* 65, no. 4:810–46.

Hamilton, Barton, Jack Nickerson, and Hideo Owan. 2003. Team incentives and worker heterogeneity: An empirical analysis of the impact of teams on productivity and participation. *Journal of Political Economy* 111, no. 3:465–97.

Hazama, Hiroshi. 1978. *Nihon romu kanrishi kenkyu* [Historical studies of Japanese labor management]. Tokyo: Ochanomizu Shobo.

Helper, Suan, and Rebecca Henderson. 2014. Management practices, relational contracts, and the decline of general motors. Working Paper no. 19867, National Bureau of Economic Research, Cambridge, MA.

Hyodo, Tsutomu. 1971. *Nihon ni okeru roshi kankei no tenkai* [The evolution of labor-capital relations in Japan]. Tokyo: University of Tokyo Press.

Ichniowski, Casey, Kathryn Shaw, and Giovanna Prennushi. 1997. The effects of human resource management practices on productivity: A study of steel finishing lines. *American Economic Review* 87, no. 3:291–313.

Itoh, Hideshi. 1991. Japanese human resource management from the viewpoint of incentive

theory. *Ricerche Economiche* 45:345–76.

Jones, Derek, and Takao Kato. 1995. The productivity effects of employee stock ownership plans and bonuses: Evidence from Japanese panel data. *American Economic Review* 85, no. 3:391–414.

———. 2011. The impact of teams on output, quality and downtime: An empirical analysis using individual panel data. *Industrial and Labor Relations Review* 64, no. 2:215–40.

Kambayashi, Ryo, and Takao Kato. 2011. Long-term employment and job security over the last twenty-five years: A comparative study of Japan and the US. Discussion paper no. 6183, the Institute for the Study of Labor (IZA), Bonn.

Kandel, Eugene, and Edward Lazear. 1992. Peer pressure and partnerships. *Journal of Political Economy* 100, no. 4:801–17.

Kato, Takao, and Motohiro Morishima. 2002. The productivity effects of participatory employment practices: Evidence from new Japanese panel data. *Industrial Relations* 41 (4): 487–520.

Kato, Takao, and Hideo Owan. 2011. Market characteristics, intra-firm coordination, and the choice of human resource management systems: Theory and evidence. *Journal of Economic Behavior & Organization* 80 (3): 375–96.

Koike, Kazuo. 1988. *Understanding industrial relations in modern Japan.* London: MacMillan Press.

———. 2012. *Kohinshitsu Nihon no kigen* [The origins of Japan's high quality]. Tokyo: Nihon Keizai Shinbun Shuppansha.

Lazear, Edward. 1979. Why is there mandatory retirement? *Journal of Political Economy* 87, no. 6:1261–84.

———. 2000. Performance pay and productivity. *American Economic Review* 90, no. 5:1346–61. Washington, D.C.: Brookings Institution.

Levine, David. 1995. *Reinventing the workplace: How business and employees can both win.* Washington, D.C.: Brookings Institution.

MacDuffie, John Paul. 1995. Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review* 48, no. 2:197–221.

Maddison, Angus. 2003. *The world economy: Historical statistics.* Paris: OECD Publishing.

Moriguchi, Chiaki. 2000. The evolution of employment relations in U.S. and Japanese manufacturing firms, 1900–1960: A comparative historical and institutional analysis. Working Paper no. 7939, National Bureau of Economic Research, Cambridge, MA.

———. 2003. Implicit contracts, the Great Depression, and institutional change: A comparative analysis of U.S. and Japanese employment relations, 1920–1940. *Journal of Economic History* 63, no. 3:625–65.

———. 2005. Did the American welfare capitalists breach their implicit contracts during the Great Depression?" *Industrial and Labor Relations Review* 59, no. 1:51–81.

Moriguchi, Chiaki, and Hiroshi Ono. 2006. Japanese lifetime employment: A century's per-

spective. In *Institutional change in Japan*, ed. Magnus Blomstrom and Sumner La Croix. London: Routledge.

Moriguchi, Chiaki, and Emmanuel Saez. 2008. The evolution of income concentration in Japan, 1886–2005: Evidence from income tax statistics. *Review of Economics and Statistics* 90 (4): 713–34.

Morita, Hodaka. 2005. Multi-skilling, delegation, and continuous process improvement: A comparative analysis of US-Japanese work organizations. *Economica* 72, no. 285:69–93.

Nihon Rodo Undo Shiryo Iinkai. 1959. *Nihon rodo undo shiryo, dai 10 kan* [Historical data of Japanese labor movement, vol.10]. Tokyo: University of Tokyo Press.

Nishinarita, Yutaka. 1988. *Kindai Nihon roshi kankeishi no kenkyu* [Historical study of the modern Japanese labor-capital relations]. Tokyo: University of Tokyo Press.

Odaka, Konosuke. 1984. *Rodo shijo bunseki* [An analysis of the labor markets in Japan]. Tokyo: Iwanami Shoten.

Ohara Institute for Social Research. 1964. *Taiheiyo sensoka no rodosha jotai* [Labor conditions during the Pacific War]. Tokyo: Toyo Keizai Shinposha.

Ohkusa, Yasushi, and Fumio Ohtake. 1997. The productivity effects of information sharing, profit sharing, and ESOPs. *Journal of the Japanese and International Economies* 11 (3): 385–402.

Ono, Hiroshi. 2010. The lifetime employment in Japan: Concepts and measurements. *Journal of the Japanese and International Economies* 24 (1): 1–27.

Osterman, Paul. 1994. How common is workplace transformation and who adopts it? *Industrial and Labor Relations Review* 47:173–88.

Pfeffer, Jeffrey. 1998. *The human equation: Building profits by putting people first*. Boston: Harvard Business School Press.

Shimizutani, Satoshi and Izumi Yokoyama. 2009. Has Japan's long-term employment practice survived? Developments since the 1990s. *Industrial and Labor Relations Review* 62, no. 3:313–26.

Showa Dojinkai, ed. 1960. *Wagakuni chingin kozo no shiteki kosatsu* [Historical survey of Japanese wage structure]. Tokyo: Shiseido.

Sugayama, Shinji. 2011. *"Shusha" shakai no tanjo* [Birth of the "company man" society]. Nagoya, Aichi: University of Nagoya Press.

Sumiya, Mikio. 1971. *Nihon shokugyo kunren hattatsushi (ge)* [A history of the development of Japanese vocational training, vol. 2]. Tokyo: Japan Institute of Labour.

Williamson, Samuel. 2014. *What was the U.S. GDP then?* Measuring Worth. http://www.measuringworth.org/usgdp/.

Zwick, Thomas. 2004. Employee participation and productivity. *Labour Economics* 11 (6): 715–40.

Labor-Management Relations during High Economic Growth: Japanese-Style Labor-Management Relations

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This research paper defines the concept of labor-management relations broadly as "relations between a corporation (management) and workers (worker class)," and carries out a comparative analysis of labor-management relations during the period of high economic growth and the present. Generally, labor-management relations are often treated as relations between a corporation (management) and a labor union. However, in these times when the rate of unionization has declined to a low 17.7%, a variety of labor problems arise that fall outside the framework of that relationship. Compared with the present, the fact that the relationship between labor unions and corporations can be used as the framework for analysis in many cases is itself a characteristic of the high economic growth period.

The fountainhead of labor-management relations during the period of high economic growth is "The Three Guiding Principles of the Productivity Movement" publicized in 1955. The Japanese economy had recovered to the level where the country was "no longer in the postwar period," and striving for future growth through modernization was sought by national consensus. Corporations (management) and workers, who heatedly confronted each other repeatedly, constructed a labor-management mechanism to strive for modernization by instead transforming the incompatibility between productivity improvement and employment preservation into an opportunity for progress as each side raised the respective goals. This was "harmonious labor-management relations" as a collective with the shared fate of growing together as they persevered to achieve goals in their respective interests.

I. Introduction: Research Objective and Perspective

This paper describes the characteristics of labor-management relations during the period of high economic growth, based on a comparison with the present and taking a broad view of labor-management relations. Although there are many reasons for looking back at history, the reason for analyzing labor-management relations during the period of high economic growth in this paper is to search for the root of the problem of truly confused current labor-management relations and use it as the first step in finding a clue to a solution.

Labor-management relations during the high economic growth period brought forth stable employment relations and became one of the pillars supporting the high economic growth. Lifetime (long-term) employment, seniority wage system and enterprise unions have received high praise as the distinctive features of Japanese-style business management. However, when taking into consideration the labor situation in Japan at the present time, conditions have changed completely and present day labor-management relations have brought about employment instability and caused many new and grave labor problems.

Nevertheless, today's labor-management relations are the result of both rejecting and inheriting labor-management relations from the period of high economic growth. Therefore, it is greatly meaningful to study history when ascertaining their current state. Consequently this research paper presents what was learned about the new by studying the past, such as what changed in labor-management relations and whether it will be possible to recover the type of labor-management relations from the period of high economic growth that produced the formation of stable employment relations and produced labor-management relations responsible for the growth of the Japanese economy, in order to search for a prescription for the present to remedy its truly serious labor problems.

II. The Concept of Labor-Management Relations

In ascertaining the characteristics of labor-management relations in the high economic growth period from comparisons with the present, the stipulation of its concept will first be noted to determine how to best grasp labor-management relations as the subject of analysis.

1. Corporations (Managers) and Labor Unions

Generally speaking, the concept of labor-management relations is frequently understood as the referring to relations between corporations (managers) and labor unions. However, the percentage of organized members for labor unions in many countries today has declined, and in Japan as well the situation is such that unionization of less than 20% of the employed has become a constant, and in 2013, this percentage fell to a new record low of 17.7%. It is for this reason that limitations have as a matter of course arisen to analyzing the variety of labor problems that occur at present using the relations between corporations and labor unions organized with only a small percentage of workers.

Heretofore, those qualified to be union members were mainly regular employees. However, the percentage of non-regular employees has increased to account for 36.7% of the employed (in 2013), and is briskly closing in on 40%. In spite of the unionization of non-regular employees progressing, the rate of unionization of part-timers is still only 6.5% and represents only a small portion of the total. People working unwillingly as non-regular employees are also not few in number, and since their wages are low and their employment situation is unstable, there even arises a situation where these people bear considerable disadvantages in how they live their lives as individuals, such as not being able to build families and having to give up on marriage, childrearing, etc. Even if they have such grave labor problems, those who are not union members are not few in number.

In addition, the number of welfare benefit recipients has reached a postwar high and now surpasses 2.1 million people. While there are serious problems deeply related to labor, such as people who have lost their job and people who are labeled as NEET (not in education, employment or training), since such problems arise at a stage where an employment

relationship cannot be formed, it is difficult for labor unions to stand at the front, directly deal with them and become liaisons for problem resolution. Furthermore, individual labor disputes are increasing sharply, and there arise many disputes that are unrelated to labor unions. In other words, there are also many issues that are difficult to deem or be seen to be subjects of concern from the standpoint of relations between corporations and labor unions. Amid the frequent occurrence of serious labor problems that shake the foundations of people's livelihoods and the need to analyze these problems, there are not a few areas that are overlooked when examined using the general theory of labor-management relations to date. The academic field of the study of labor-management relations theory itself is feared to be in danger of decline.

Accordingly, here we would like to begin by taking a look back at and studying how the concept of labor-management relations had been understood in Japan's history following World War II.

2. Various Theoretical Concepts of Labor-Management Relations

Labor-management relations materialized along with the arrival of the industrial sector in modern society, and are one of the basic social relationships in industrial society. It is for this reason that after the war Japan, strongly influenced by John T. Dunlop, made progress in the study of Japanese labor-management relations. However, the concept of "labor-management relations" is not in any way interpreted uniformly, but was understood in a multi-faceted way.

Dunlop (1958), who was the foundation of the theoretical backbone for constructing postwar Japanese labor-management relations, in "Industrial Relations Systems" saw industrial relations (labor-management relations) in a broad sense as not being limited to the relationship between the employer and the worker and being "one of the frameworks for macro-analysis." Furthermore, Dunlop mentioned the necessity of the academic approach from not only the field of economics, but from a variety of fields of the social sciences, such as sociology, business administration, jurisprudence and politic science. In addition, Ichiro Nakayama, who played a large role at the time of the formation of Japan's stable labor-management relations, used a broad interpretation and noted that "the labor-management relationship itself is from the first a relationship between one human being and another human being, or, a relationship between one group of human beings and another group of human beings (Nakayama 1974, 121). Goro Mori as well stated that "the labor-management relationship is one of the overall structural social relationships that creates social order between the employer class and the worker class in industrial society at the stage in history when employment relations become common, and how this social relationship should be is prescribed by the cultural, social, economic, technological and other various environmental factors that affect that industrial society and also by the government's social and labor policies" (Mori 1981, 5). Mori generalizes that the labor-management relationship is a social relationship broadly between the employer class and the worker class.

On the other hand, Masumi Tsuda noted that “the nucleus of labor-management relations is collective bargaining between corporations (organizations) and labor unions, and the conclusion of an organizational agreement and its observance are the products of this collective bargaining” (Tsuda 1980, 59). Tsuda understands relations between a corporation and labor union to be the main part of labor-management relations. Taishiro Shirai also noted that “of the relationships between individuals and groups and between organizations that are created by industrial activities, the labor-management relationship refers to the social relationship in general between workers and employers (managers), the most basic of relationships; however, at the core of such a relationship is the relationship between labor unions and their counterpart employers or managers and their organizations” (Shirai 1993, 2). Shirai places the relationship between labor unions and employers at the center of labor-management relations. It is conceivable that due to the growing size and influence of the role in society of labor unions, what are called labor-management relations came to be seen as the relationship between corporations and labor unions. In addition, labor laws are broadly divided into these categories such as laws on labor market, individual labor relations and collective labor-management relations. What are called labor-management relations fall in the domain of group labor-management relations, and from the standpoint of the law it is common that labor unions are the main organizations concerned (See Sugeno [2003], for example) .

Looking at the various analytical frameworks, a framework greatly depends on the social background of the times concerned or the analytical point of view used, and the concept that can most directly analyze the characteristics of the labor problem that has arisen is adopted. Accordingly, in the comparison with the present, this paper as well uses the concept of labor-management relations in a broad sense as the concept that can most clearly analyze the characteristics of labor-management relations during the period of high economic growth. Limiting the research subject to relations between a corporation and labor union, which was the common practice heretofore, would mean that problems arising at present that fall outside the framework of labor unions and serious problems that arise prior to the formation of employment relationships might not be central subjects of study. Furthermore, the fact itself that labor unions were able to become synonymous with the word “labor” in labor-management relations to begin with during the high economic growth period is a characteristic of labor-management relations in the period of high economic growth, and this is a great difference with the present. It is recognized that studying labor-management relations by focusing on the main players of their formation is important in analyzing the characteristics of labor-management relations during the period of high economic. Based on this awareness, analysis will be advanced by using the concept of labor-management relations in the broad sense. In other words, developing on the thinking of Dunlop’s ‘Industrial Relations,’ and with Goro Mori’s concept of the labor-management relationship, that is the social relationship between the employer class and the worker class, as the central concept, the relations will be as described by “Corporations (management)

and Workers (worker class)" (Ebisuno 2006, 2010) in a broad sense.

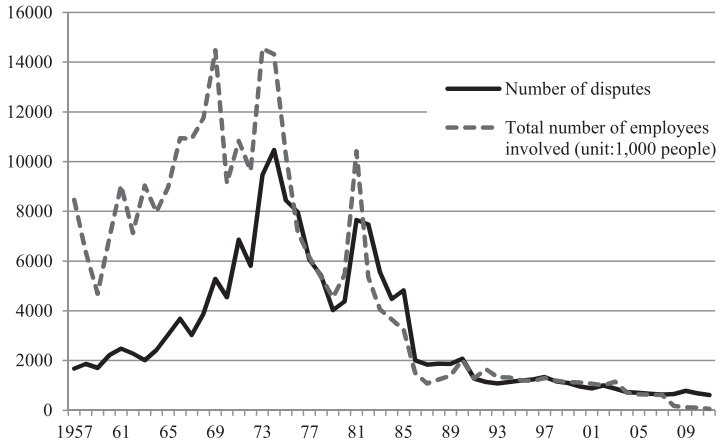
III. Theories

Japan's labor-management relations during the high economic growth period were labor-management relations that supported the economic growth of Japan, a country that achieved economic development that was truly unprecedented in the world, and this has attracted attention both inside and outside Japan and has been the subject of a variety of analyses. The characteristics of this phenomenon are frequently labeled as being "typically Japanese," and therefore their uniqueness is pointed out. Since, among the characteristics concerned, the following two are mentioned often, brief comments on them follow here.

First of all, there is the characteristic of being "cooperative." Viewed historically, Japan experienced a period of intense labor-management disputes following the war. However, unlike that period, during the high economic growth period, disputes subsided and harmonious relations could be built. In addition, comparative studies of labor-management relations in various foreign countries, particularly comparisons with labor-management relations in Western countries, show that labor-management disputes in Japan are few in number and labor unions and employers have formed relatively cooperative relationships. Studies carried out abroad, such as by Abegglen (1958) and Dore (1973), are also not few in number, and there is research that looks at what is distinctive about Japan compared with other countries and whether other countries as well could realize the same kind of labor-management relations as Japan. Furthermore, as Japanese corporations advanced in making inroads overseas, there was also the progress of research into whether Japanese-style labor-management relations, one of the strengths of Japanese corporations, could be duplicated in local production and local management, and which areas of Japanese-style labor-management relations could be duplicated abroad (e.g. Abo 1988; Shimada 1988).

Research analysis based on these perspectives to be sure found that the fact that labor and management were cooperative was one of the characteristics of Japan's labor-management relations during the high economic growth period. However, has this characteristic been passed on to the present as well? Or, instead, can it be called a distinctive characteristic particular to its time when comparisons are made with the situation at present?

As an example, looking at the number of labor strikes (Figure 1), during the high economic growth period in 1965 there were 3051 cases and in 1970 there were 4551 strikes. In comparison, the number of strikes has been far fewer recently, only 708 cases in 2005 and 612 cases in 2011. In addition, the number of employees involved in strikes has also declined greatly at present compared with the high economic growth period (8,975,000 employees involved in 1965, 9,137,000 in 1970; 646,000 in 2005, 58,000 in 2011). Unlike the high economic growth period, there are a variety of problems at present, such as the implementation of great numbers of early retirements as a result of streamlining through



Source: Ministry of Health, Labour and Welfare, *Survey on Labour Disputes Statistics*.

Figure 1. Number of Labor Disputes and Total Number of Employees Involved

rationalization, the unemployment rate not dropping below 4% even in periods of prosperity and real wages falling after 1997. Accordingly, individual labor disputes are also increasing rapidly. However, there are far fewer labor strikes compared with the high economic growth period. Nevertheless, the small number of strikes does not necessarily enable one to say that labor-management relations are satisfactory. If compared with the present, it can be said that while the high economic growth period produced a number of disputes, labor and management had built stable employment relations.

There are not a few studies that see what is called Japanese-style business management based on "the three sacred treasures of lifetime (long-term) employment, seniority wage system and enterprise unions" as the second characteristic of labor-management relations during the period of high economic growth. However, there exist various opinions as to whether it can be said that such employment relations can be called "typically Japanese." It is pointed out that long-term employment exists not only in Japan, but in Western countries as well, and seniority wage system is also seen frequently among white-collar workers in foreign countries (e.g. Koike 1991, 1993; Gordon 2012). In addition, regarding the question of whether the long-term employment and seniority wage system have collapsed in the present day, a great variety of views crowd the scene as regards the subjects of analysis, such as should only regular employees be the target of study, should it be the pay system debate or is it the problem of the pay curve. Therefore, there is no consensus of opinions regarding employment relations in Japan.

It is in this way that many theories exist in the study of the various aspects of employment relations. However, there has been virtually no research carried out regarding the subject of the various relationships between corporations and workers as the main players that give birth to such employment relations; that is, labor-management relations in the

broad sense. In addition, there are few comparisons with the present that explain this characteristic. Therefore, this paper would like to tackle the subject of the various relationships between corporations and workers directly as relationship theory and study the characteristics of the high economic growth period.

IV. The Background to the Formation of Japanese-Style Labor-Management Relations

"The Three Guiding Principles of the Productivity Movement" is a work that markedly pointed out the characteristics of labor-management relations during the period of high economic growth. Since these characteristics are commonly commented upon as being typically Japanese, hereafter they will be referred to as Japanese-style labor-management relations.

"The Three Guiding Principles of the Productivity Movement," publicized in 1955, is the fountainhead from which Japanese-style labor-management relations arose. The productivity improvement movement advanced based on Japanese methods, while receiving technological assistance from the U.S. and using Europe's productivity improvement movement as a model. First of all, why did "The Three Guiding Principles of the Productivity Movement" arise? That is, this paper will first briefly organize postwar labor-management relations in order to outline a general view of the historical background to the formation of Japanese-style labor-management relations in the high economic growth period.

1. New Phase of Economic Development

Although it is needless to say, the Japanese economy fell into a state of ruin as a result of World War II, and Japanese society was in a state of chaos. The industrial production of the mining and manufacturing sectors was at about 30% of the prewar level, there continued to be delays in or non-delivery of food rations that the government distributed, and the Japanese people were reduced to living impoverished lives and enduring hunger.

Thereafter, the Japanese economy rode the course to recovery due to the opportunity presented by the special procurements resulting from the Korean War of 1950. Furthermore, consumers, who had had austerity forced upon them for the long period of time since wartime, finally were able to purchase the necessities of their lives and this gave rise to a "consumption boom." Consequently, in 1953, per capita personal consumption surpassed the prewar level (1934–36). However, thereafter there developed a cloud even over this consumption boom that had continued for 27 months, and, coupled with the policy of monetary tightening, business conditions suffered a setback.

The Economic Whitepaper of 1956 noted that "It is no longer in the postwar period. The country was about to be confronted by a different situation. Growth through recovery had ended. Growth hereafter would be supported by modernization. In addition, the advancement of modernization would f be possible only through economic growth that was

fast and moreover stable" (Economic Planning Agency 1956, 42). A mere 10 years since the end of the war, the economy had recovered to reach a stage that surpassed the prewar level. Nevertheless, as deep as the depth of the valley into which the country had fallen as a result of losing the war had been, so was the speed at which it recovered swift and the purchasing desire of consumers and the investment desire of corporations striking.

However, it was emphasized that this buoyancy was exhausted as demonstrated by the declaration that "It is no longer in the postwar period," and that there was a limit to future growth with the route taken so far. The Whitepaper noted that as a result, "modernization" came to be sought and striving for economic growth through modernization came to be asserted; furthermore, that modernization would be possible through economic growth. Therefore, at that time, when the economy had recovered to the level where "It is no longer in the postwar period," the formation of the growth mechanism, whereby striving for modernization would lead to economic growth and that growth would promote the next phase of modernization, became the supreme task for Japanese society.

2. Intense Labor-Management Conflicts

Let us now shift our attention to labor-management relations, one of the pillars that had supported the postwar social economy. "The Labor Union Law" was instituted in 1945, giving official recognition to the formation of labor unions and to their activities. As mentioned earlier, workers were living lives of extreme poverty; therefore, there developed intense labor movements, whose slogans were "wage hikes" and "democratization of the workplace" to protect people's livelihoods and "no firings" to protect workers from dismissals. There were some unions that carried out production management on their own as a way to "protect our livelihood with our own power" and also a highly political labor movement based on an ideology that was linked to opposition to the free economy system.

Meanwhile, the management side experienced difficulties in carrying out their activities, as a result of the authorities of the Occupation Forces ordering measures such as the dismantling of the *zaibatsu* (financial combines) and the purging of financiers from public office. However, the business world responded constructively to rebuild corporations, establishing as their own missions the restoration of order to business management and the reconstruction of the Japanese economy. Upon the foundation of the Japan Federation of Employers' Associations in 1948, the organization put forth that "we declare that 'management, act fairly and forcefully' as we must work to save the nation together through mutual respect for management rights and labor rights and with each carrying out their respective duties…..we devote ourselves to unwavering efforts towards establishing management rights, securing peace in the industrial world and reconstructing the Japanese economy….."

Under the harsh economic circumstances following the war, labor and management laid out their respective claims and thereby intense disputes arose. In 1949, when the Dodge

Table1. Major Strikes

1951	Mitsukoshi Strike
1952	Japan Federation of Coal Mine Workers' Unions Strike
	All Japan Electric Workers Union Strike
1953	Nissan Strike
	Toyota Strike
	Mitsui Miike Strike
1954	Amagasaki Seiko Strike
	Omi Kenshi Strike
	Nikko Muroran Strike

Line[1] was implemented, a reduction in the number of government workers was carried out; in particular, there were mass dismissals in public corporations overseeing the railroad, postal and telegraph and telephone services. In addition, over 1,000 major private sector corporations also made cuts in their personnel. As a result, as many as about 490,000 workers were the targets of job reductions through the simplification of government administration and corporate reforms. Furthermore, as very great numbers of workers lost their jobs due to bankruptcies among small and medium-sized companies, workers organized labor unions and went on labor strikes. Accordingly, in this year 1949, the rate of labor union organization recorded a postwar high of 55.8%.

Thereafter, as a result of the special procurements arising for the Korean War in 1950, the economy began a revival in earnest. However, this did not calm labor-management disputes, and it was a time of one strike after another (Table 1). The causes of labor disputes arising were certainly not all similar; rather, they were truly wide-ranging. Several representative ones among these causes are listed below.

(1) Although corporate profits had begun to rise as a result of the business recovery, the standard of living did not reach the halfway point of the prewar level (Economic Stabilization Agency 1949, 44–45) and wage hike demands spread.
(2) There were disputes between labor and management concerning the massive dismissals that arose because of rationalization. Strikes became prolonged at companies such as Amagasaki Seiko and Nikko Muroran, resulting in the unfurling of "opposition strikes" involving entire communities and families.
(3) There was intense worker resistance to the problem of dismissals that arose along with the switch in the type of fuel used to produce power brought on by changes in the indus-

[1]This was the financial and monetary tightening policy that the country was forced to implement for the self-reliance and stability of the Japanese economy. It was drafted and recommended by Joseph Dodge, GHQ's economic advisor. Inflation in the Japanese economy was quickly quelled through this, but the resulting deflation caused the economy to fall into a state of great depression.

trial structure, especially resistance to the closing or curtailment of mining operations.

(4) There remained a considerable number of cases of pre-modern employment relations of the kind at Omi Kenshi. In addition, disputes spread at small and medium-sized companies as well, where there were obvious differences in worker treatment compared with large corporations.

(5) Under the severe state of cold war that existed between free world and socialist countries, there were ideological conflicts that were labor disputes to realize a socialist revolution; that is, labor-management disputes that were highly political in nature.

These kinds of intense labor-management disputes inflicted great damage upon both corporations and workers and their effect on the economy was immeasurably large.

However, from these disputes arose the germs from which labor-management relations during the period of high economic growth were born. This is detailed in Section VI.

V. The Three Guiding Principles of the Productivity Movement

Although the Japanese economy had recovered to the prewar level by the mid-1950s, Japan's per capita GNP was only 11% of the U.S.'s and it lagged markedly behind developed countries. In addition, in 1954, Japan's average export amount was 76% of its import amount, its trade balance continued to record a current deficit and the country was not competitive in international markets, thereby putting the country in an inferior position. Although economic development was the most important task for Japan, being at the economic level that was no longer in the postwar period, it could not hope for the economic development that was produced by postwar reconstruction. It is for this reason that modernization was a vital task. However, labor and management, the main players bearing the burden of this modernization, had been repeatedly in intense conflict over diverse issues for a long time since the postwar period for the various reasons noted heretofore. As these disputes caused extremely great wear and tear to both labor and management and hindered modernization, both sides came to look forward to a way out. It is for this reason that the 1955 Japan Productivity Center was established and "The Three Guiding Principles of the Productivity Movement" were put forth (See Japan Productivity Center 1965, 1985, 2005).

To begin with, the Japan Association of Corporate Executives, influenced by Commercial Service Officer Haroldson of the U.S. Embassy, began moves to accept the "productivity improvement movement," and in 1954, four economic organizations (KEIDANREN, NIKKEIREN, the Japan Association of Corporate Executives and the Japan Chamber of Commerce and Industry) established the Japan-U.S. Productivity Enhancement Committee (renamed the Japan Productivity Council). Thereafter, it became the "Japan Productivity Center," a private sector organization composed of people from labor and management and academic experts. The establishment of this organization was greatly influenced by events in the early 1950s, such as the discussion in the ILO regarding "productivity improvement and human relations" and the establishment of the 16-nation productiv-

ity headquarters and the development of the European productivity movement and its accompanying achievement of economic reconstruction.

Noted below are the aforementioned Three Guiding Principles, the contents of which this paper would like to study concretely.

1. Productivity improvement ultimately increases employment. However, regarding excess personnel arising transitionally, from the point of view of the national economy, the government and the private sector shall cooperate to devise appropriate measures, such as through as much as is possible personnel redistribution and other ways to prevent the loss of employment.
2. Regarding specific methods to achieve productivity improvement, labor and management shall cooperate to study and discuss this, based on the circumstances of the individual corporations.
3. The various fruits of productivity improvement shall be distributed fairly to managers, workers and consumers, according to the actual condition of the national economy.

It is here that is found the model for labor-management relations during the period of high economic growth, that is, Japanese-style labor-management relations. Figure 2 depicts the relationship of labor and management that would be developed based on the Three Guiding Principles. The contents of these principles will be studied in a concrete manner hereafter.

It goes without saying that striving to improve productivity is necessary in order to realize modernization. However, productivity improvement causes an accompanying excess of labor to arise. As noted earlier, this resulted in dismissals and intense labor-management disputes. In response to this, Principle 1 asserts that "from the point of view of the national economy, the government and the private sector shall cooperate to devise appropriate measures, such as through as much as is possible personnel redistribution and other ways to prevent the loss of employment." Corporations are called upon to act from the standpoint of the national economy and continue to employ excess personnel resulting from improvement of productivity. In order to reconcile the improvement of productivity and the securing of employment, two things that are incompatible, corporations, departing from conventional business management principles, came to place a priority on share expansion rather than the maximization of profits. They expanded their business through market creation and thereby sought to secure employment. At the time, there were the prevalent practices of stocks held unchanged by stable stockholders and stocks held by stable institutional investors. Corporations were not greatly pressed to return high short-term profits to stockholders; therefore, they could carry out large sales at small profits instead of pursuing profit motive and were able to devote their efforts to acquiring market share and strive to create work.

Regarding specific methods to realize this improvement of productivity and the securing of employment, as described by Principle 2, cooperation between labor and management, corresponding to the circumstances of individual corporations, is sought. Here is found the cornerstone of enterprise labor unions becoming the center of Japan's

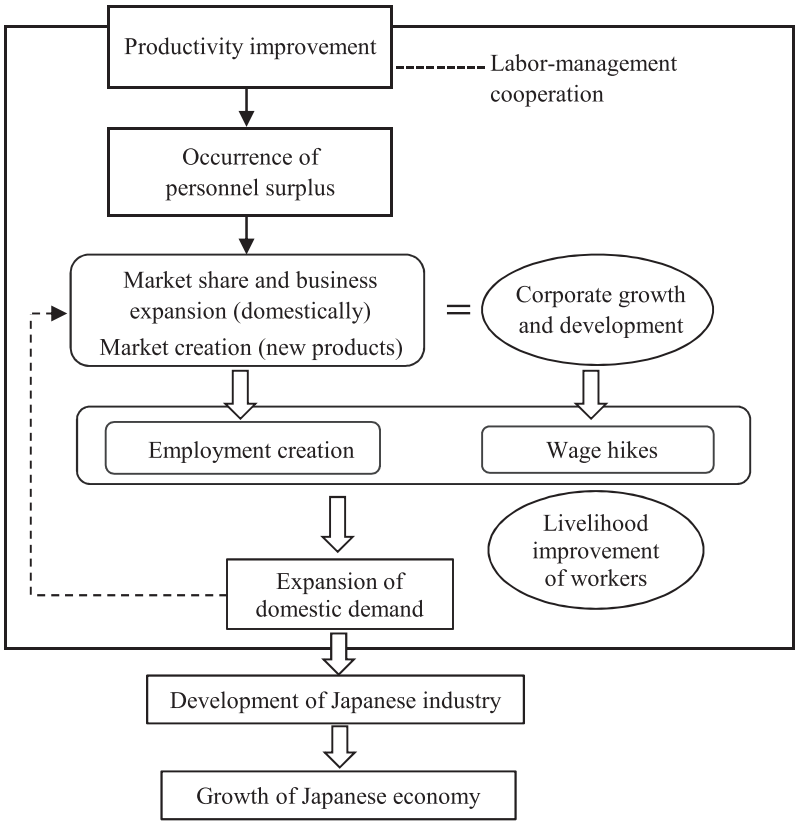


Figure 2. Japanese-Style Labor-Management Relations (Labor-Management Relations during the Period of High Economic Growth)

labor-management collective bargaining. In addition, as stated by Principle 3, a fair distribution of the fruits of productivity improvements is demanded. That is to say that demand is produced and markets are created through the appropriate distribution of the fruits of productivity improvements to workers and consumers as well. In other words, share expansion, which is indispensable to the securing of employment, is realized through implementing appropriate wage hikes for workers.

At the time when the Three Guiding Principles were publicized, a variety of actions were underway within both labor and management. The Japan Association of Corporate Executives published “The Awareness and Practice of Social Responsibility by Managers” in 1956. This notes “the fair distribution of corporate earnings” as a new business management issue and presents what the way of thinking and ideal behavior should be as managers, going beyond rationalization based on increasing profits and touching upon the importance of labor’s meaning of existence. In order to actively strive to promote the Three Guiding Principles, the publication points out what the ideal manager should be like, as it also pre-

sents the points of reflection to date regarding how managers are.

Meanwhile, there were opposition moves within labor unions, and initially the resistance of the General Council of Trade Unions of Japan (SOHYO) and others was great, as the productivity improvement movement began, led by managers. However, the Japanese Confederation of Labor Unions (SODOMEI) had decided on "The Case Concerning SODOMEI's Stance toward the Productivity Improvement Movement," what is called "SODOMEI's 8 Principles." In this it indicated its stance towards the productivity improvement movement. The beginning of this is included here. "We will deal with the productivity improvement movement based on the following course to promote the development of the right movement and correct what needs to be changed, such as the capitalist centric ideology apparent in the current productivity improvement movement……(i) The productivity improvement movement differs from individual rationalization movements and efficiency improvement movements and is a movement that runs through the comprehensive measures that aim for the self-reliance of the Japanese economy and the improvement of people's lives. (ii) The productivity improvement movement is not a movement that aims to increase corporate profits by strengthening labor, but, on the contrary, brings about the improvement of labor conditions and real wages. (iii) The productivity improvement movement should be a movement that brings about an increase in the volume of employment through the expansion and development of the economy. Therefore, employers and the government must devise effective measures to eliminate the danger of the loss of employment and strive for employment stabilization……" That is, SODOMEI exhibited understanding, while having criticisms and making demands of managers, and setting forth a stance of active participation towards the productivity improvement movement.

There was understanding for the productivity improvement movement not only by managers, but also within labor unions as well in this way. As a result, it penetrated throughout society gradually. Government and municipal offices also exhibited understanding that the productivity improvement movement was more significant than the rationalization movement and assessed the importance of this movement on the point of having "the character of being for all people" as it related to "the interests of managers, workers and consumers as a whole" (Ministry of International Trade and Industry Enterprise Agency Director Hisatsugu Tokunaga).

Along with admonishing labor unions that "Labor unions……have an obligation to fulfill a responsibility that corresponds in size to the greatness of their presence in society," it is noted that regarding managers as well "……It is desired that the conservative leadership class, which as ever will not change their old ways at all, reflect and reconsider seriously……For the near future, at the least, sincerity and effort must be expressed to ensure that productivity improvement does not invite sacrifices by labor (Ministry of Labor's Labor Administration Agency Director Minoru Nakanishi).

Furthermore, Senior Managing Director Kohei Goshi notes that "after fattening the chicken, gather the eggs" (Asahi Shimbun, February 21, 1955). This truly makes the social

appeal for labor and management to move away from the immediate and short-term competition for the pie between labor and management and strive to enlarge the pie by improving productivity through labor-management cooperation and then, receive a portion distributed from an even bigger pie. Ichiro Nakayama also responded to the criticism from the "Marxist Theory" camp by explaining the importance of the productivity improvement movement. In this way, the significance of the productivity improvement movement was communicated to society from diverse standpoints by the government, labor, management and academic experts, and thereby came to penetrate widely throughout society.[2]

VI. Japanese-Style Labor-Management Relations

Using the mechanism indicated by Figure 2, it will be made clear what the characteristics of labor-management relations were as presented by the Three Guiding Principles of the Productivity Movement, that is, labor-management relations during the period of high economic growth.

1. The Structure of the Conflict between Corporations and Workers and Their Unification

Corporations grow through enlarging their business and through this is realized the securing of employment by workers. Furthermore, because wages rise as a result of fair distribution, corporate growth also works to improve the lives of workers. Therefore, there is the characteristic that the vectors of prosperity for both corporations and workers are the same. Put in other words, for workers to protect their employment and improve their lives themselves, the prosperity of the corporations that employ them is indispensable. That is to say, corporations and workers are in a relationship where they share the same fate and want their company to be victorious in the competition for market share.

To begin with, corporations and workers have different goals and are actors that develop their movements based on different principles. As looking back at history makes clear, these conflicting interests have produced fierce disputes. Since productivity improvement and the securing of employment generally are incompatible, labor and management are mutually in conflict. Labor-management relations that convert this conflict into an opportunity for growth are indeed "Japanese-style labor-management relations."

This labor-management structure was not something that labor and management agreed upon from the beginning. While weathering the various kinds of opposition as noted earlier, after many complications, the labor-management structure spread gradually. Labor and management are in principle in mutual conflict. This conflict structure has the structural characteristic of the cooperative relationship between labor and management being built

[2] In 1964, talks were held between Prime Minister Hayato Ikeda and SOHYO Chairman Kaoru Ota.

using conflict as an opportunity for growth. Therefore, during the high economic growth period as well friction developed as a matter of course and labor-management disputes existed.

Certainly as compared with the period prior to high growth and also as compared with other countries, disputes decreased during Japan's high economic growth period and labor-management relations were cooperative in character. However, the important fact is that this structure was the cooperative relationship between labor and management using conflict as an opportunity for growth. In addition, it was a mechanism whereby both labor and management persisted in asserting their respective movement principles and both persisted in carrying through their asserted objectives of seeking their own growth. It was a structure in which, although self-restraint and cooperation would be at work for the short-term, labor and management would cooperate and seek further growth in the long-term and neither would have to make sacrifices. That is, it can be said that it was not "a conciliatory relationship that denied conflict," but was "a cooperative relationship that included conflict and stood upon it."

2. The Growth of the Japanese Economy and the Popular National Movement (Unification of Government, Labor and Management)

A major characteristic is that productivity improvement was a popular national movement. Japan did not have international competitiveness and was an economically minor country. Amid pronouncements that economic growth from reconstruction had ended, it was clear to everyone, managers and also workers, and regardless of position it was the national consensus that the country would have to strive for the growth of the Japanese economy through modernization. Furthermore, both labor and management understood that the repeated intense labor-management disputes were an obstacle to modernization and wished to find a way out. That is, in spite of differing positions, they sought the same thing, the growth of the Japanese economy and the cultivation of industry in Japan to achieve this goal.

Since the economic base in Japan at that time was extremely weak and Japanese corporations were utterly unable to compete internationally, their business base was naturally Japan's industrial society. That is to say, without first cultivating industry in Japan, a corporation's business management would not be viable. The government strove to cultivate industry by efficiently distributing the country's limited and meager capital and improve the industrial base. Due to limited space, only a few examples are presented (Table 2) here. For one, in 1951, the Japan Development Bank was established using national capital and an important route for supplying funds for public finance to private sectors was secured. In addition, in 1952, "the law for the promotion of corporate rationalization" was instituted, and selective cultivation of industrial sectors was carried out by giving tax reductions to particular industries. From around 1953, the government prepared respective promotion plans for each emerging industry, and in 1956, it instituted "the law for temporary measures

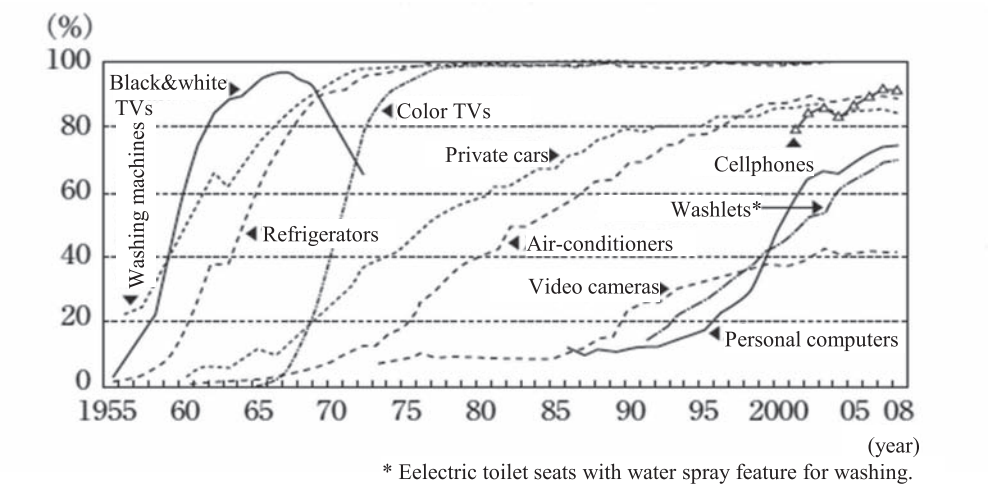
Table 2. Major Industrial Policies

1951	Japan Development Bank establishment
1952	Corporate Rationalization Promotion Law
1953	5-year Plan to Promote Synthetic Fibers Industry 5-year Plan to Expand the Gas Business 5-year Plan to Increase Production of Cellulose Acetate
1954	Second Iron and Steel Rationalization Plan decided Aircraft Manufacturing Business Law amended 3-year Plan to Build New and More Cement Plants prepared
1955	5-year Plan for Economic Independence 5-year Plan to Cultivate Synthetic Resin Engineering Petrochemical Engineering Cultivation Measures decided
1956	Law for Temporary Measures to Promote Nuclear Materials Development Law for Temporary Measures to Promote Mechanical Engineering

to promote the mechanical engineering industry" and also tailored other laws to the existing conditions. Japan thereby cultivated the leading industries of its economic growth, such as iron and steel, petrochemicals and mechanical engineering. Furthermore, beginning with the 1955 five-year plan for economic independence, Japan's many economic plans, such as the 1960 national income doubling plan, went about promoting economic growth.

Since individual corporations could realize their own growth only when the industrial base improved and other industries also experienced growth, the productivity improvement movement did not only concern individual corporations, but developed as a popular national movement. Consequently, domestic demand arose in Japanese society, the market was created in Japan and corporations achieved business expansion. Furthermore, as a result of fair distribution leading the way to the securing of employment and rising of wages, it also led to improving the lives of the people of Japan as a whole. Looking at the rate of the spread of electric household appliance ownership in urban areas during the period of 1960–65, ownership rates rose dramatically: from 55% to 95% for black and white television sets, from 16% to 69% for refrigerators and from 45% to 78% for washing machines. The rapid expansion of domestic demand for familiar durable consumer goods in national life and market creation are apparent from this (Figure 3).

In addition, it was from this year, when there was a declaration of "The Three Guiding Principles of the Productivity Movement," that the annual spring labor negotiations began. It is pointed out in the Three Guiding Principles that the specific measure for productivity improvement is left to each corporation's labor and management acting in cooperation and in accordance with the corporation's circumstances. The base upon which this labor and management stood included the various industrial measures for the purpose of industry cultivation, and it also included the goal of the cultivation of industry in Japan to achieve



Source: Cabinet Office, Government of Japan, *Consumer Confidence Survey*.

Figure 3. Rate of Popularization of Durable Consumer Goods

economic growth, which was a priority for both labor and management. Therefore, industry-based labor unions promoted the productivity improvement movement aggressively, carried out educational activities in order to have the movement penetrate into enterprise unions and devoted themselves to the improvement of the lives of workers by striving for industry cultivation and by promoting the growth of corporations.

Labor-management relations like this had a great effect on corporations without labor unions and workers who were not union members as well, and its social impact was great. For example, the wages determined through the spring labor negotiations were an important index not only for the members of the labor unions concerned, but also for small and medium-sized corporations and workers who were not yet organized. They were a social standard to attain in Japanese society. In this respect, the various relationships between corporations and labor unions were the basis for relationships within society.

3. Market Creation and Inter-Corporation Competition

For a corporation, business expansion was indispensable in maintaining jobs and market share expansion came to have priority over profit maximization, which had been generally considered a corporation's ultimate purpose. For workers, the expansion and growth of their corporation were also indispensable to securing of their own employment. Workers needed to actively participate in business management at their workplaces and to work for the growth of their corporation. The only place that Japanese corporations which did not have international competitiveness could expand their business was the domestic market. However, in Japan postwar reconstruction had already ended with the awareness that it was "no longer in the postwar period," and market creation was the only way for

corporations to expand business. In order to achieve this, fair distribution of the pie was also indispensable. This would realize the securing of employment, wage hikes and life improvements that workers sought.

Then, corporations and workers moved from fighting for the pie at hand, and aimed to expand the pie itself. By not trying to maximize profits or wages in the short-term, they obtained a greater allotment through further expansion of the pie in the medium and long-term. By placing priority on medium and long-term profits, instead of short-term profits, both labor and management advanced. Through this mechanism, with labor and management working together, intense competition came to be unfurled among corporations. This competition eventually led to the opportunity for the growth of Japan's economy.

However, it is also important that it was not a mechanism where corporations came to ruin together because of fierce competition. As corporations formed groups of affiliates and the competition took place between corporate groups, a variety of cooperative systems existed between corporations, such as regarding capital. In addition, this competition could be said to have been "managed competition" carried out under Japan's industrial policy aimed at economic growth (Yasuba and Inoki, 1989, 92), and there was also government intervention in the case where the competition became dangerously "destructive." That is, since there was public consensus on fostering Japanese industries and developing the Japanese economy, even while making use of the market mechanism it was not a situation where market principles alone reigned. Furthermore, it was a realistic policy that was beyond ideological conflicts.

4. The Foundations of the Formation of Labor-Management Relations and the Players Responsible for High Economic Growth

These labor-management relations were built by going through the prolonged and intense labor-management disputes of the postwar period. Exhausted from the repeated conflicts, eventually (i) they came to place priority on job stability and better working conditions to protect the livelihood of workers, over ideologies seeking political reforms and (ii) through these disputes, pre-modern labor management and violations of basic human rights seen in labor-management relations were eliminated, and democratization progressed within corporations. As a result, workers came to do their jobs with corporate loyalty and with a conscious awareness of the development of the corporation where they were employed. Furthermore, (iii) although labor disputes were internal problems for respective corporations, because prolonged disputes spread nationwide, as social problems they went beyond the framework of one corporation. This led people to recognize that corporations and labor unions were "vital players in a society," and consequently, corporations and labor unions become aware of themselves as social institutions and acted accordingly striving for the development of the Japanese economy as expected of them by national consensus. Through this process, the mechanism described in the Three Guiding Principles (shown in Figure 2), was realized.

In addition, labor-management relations had an impact on the high economic growth period. It was not because it was a period of high economic growth that labor-management relations that could form stable employment relations were realized. Labor and management, while harboring conflicting structures, realized stable employment relations based upon this conflict and shouldered the responsibility of achieving high economic growth.

5. The Relationship with the Three Sacred Treasures (Lifetime Employment, Seniority Wage System and Enterprise Unions)

In the intense competition among corporations, workers and corporations shared the same fate resulting in labor and management building solidarity as one organization. Since they were autonomous entities with respective principles, labor and management would by nature be in conflict with each other. However, they built a cooperative relationship and overcame the incompatibility of productivity improvement and securing employment. This was the Japanese-style labor-management relationship in the high economic growth period. It brought about the advancement of the Japanese economy which was in their common interest and allowed them to move forward together. In other word, labor and management created the mechanism for development by turning their disputes into an opportunity for cooperation.

Consequently, employment practices which were said to be the features of Japanese business management inevitably emerged, that is, lifetime employment, seniority wage system and enterprise unions (Three Sacred Treasures). The first of the Three Guiding Principles paved the way for the customary practice of lifetime employment. It was not left to chance, but in order to achieve lifetime employment for the Japanese people, the government, labor and management collaborated to secure employment and realized it as much as was possible. Regarding wages, at the base was the idea of lifetime benefits in response to lifetime employment. Considering what kind of system would be socioeconomically appropriate for lifetime benefits at that time, a seniority wage system seemed to be desirable in terms of maintaining livelihoods and the development of occupational skills. Concerning enterprise unions, as noted earlier, the specific methods for improving productivity while maintaining employment depended on the ingenuity of each corporation's labor and management (the second of the Three Guiding Principles). Under close mutual cooperation between labor and management in each company, the corporation made progress in business by winning in the fierce competition among corporations on the one hand, and the workers came to make a decent living on the other. That is why enterprise unions became mainstream in Japan.

VII. Present Day Labor-Management Relations

The characteristics of labor-management relations during the period of high economic growth were studied by defining labor-management relations in the broad sense and keeping

in mind comparisons with present day labor-management relations. The purpose of this paper is to ascertain the characteristics of labor-management relations during the high economic growth period as part of the analysis of current labor-management relations problems. Finally, to highlight the difference with the present, the characteristics of labor-management relations will be described briefly and examined for comparison, and then, the characteristics of labor-management relations during the period of high economic growth that were described earlier will be reviewed again.

In spite of experiencing harsh economic conditions recently, Japan is currently one of the world's leading economic powers. This is quite different from the environment in which Japan found itself in 1955. This is an age of progressing globalization and a borderless world for goods, money, people and information, and the overseas expansion of Japanese corporations knows no bounds.

As a result of this environmental change, labor-management relations have also undergone great changes. The characteristics of today's labor-management relations are briefly put "estranged labor-management relations" where the fruits of a corporation's productivity improvement are not always returned to the workers and corporate growth does not necessarily lead to an improvement in workers' lives. When Japanese-style labor-management relations had a significant impact on high economic growth, there was a clear national consensus on the development of the Japanese economy, and in order for Japan, which did not have international competitiveness at that time, to realize economic growth, the creation of a domestic market was indispensable. Currently, the domestic market is one of the markets in the world for the Japanese corporations gaining the international competitiveness, and it is worriedly expected to be reduced its size because of a decline in population in Japan. Meanwhile, as developing countries are achieving remarkable growth, their markets have become far more appealing for the Japanese corporations.

With more globalization, Japanese corporations expanded their business overseas for such purposes as to reduce labor cost and to avoid the foreign exchange risk, and as a result they developed labor-management relations overseas as well. Labor-management relations in Japan are but one among many labor-management relations and their presence has become of relative importance. Furthermore, even in Japan, non-regular employees represent over one third of workers and short-term employment relations have increased. Accordingly, it has become difficult for both corporations and workers to pursue mutual interests by striving for medium and long-term growth while keeping short-term profits in check; and, as noted earlier, Japanese-style labor-management relations are becoming of relative importance even in Japan.

Here, "estranged labor-management relations" based on the mechanism shown in Figure 4 have come to the fore. This is not the case with all relations between corporations and workers in Figure 4, but the mechanism in Figure 2 has become of relative significance, it did not have popular movements to promote in Japanese society, and the mechanisms shown in Figure 2 and Figure 4 coexisted in a chaotic manner. As indicated by Figure 2,

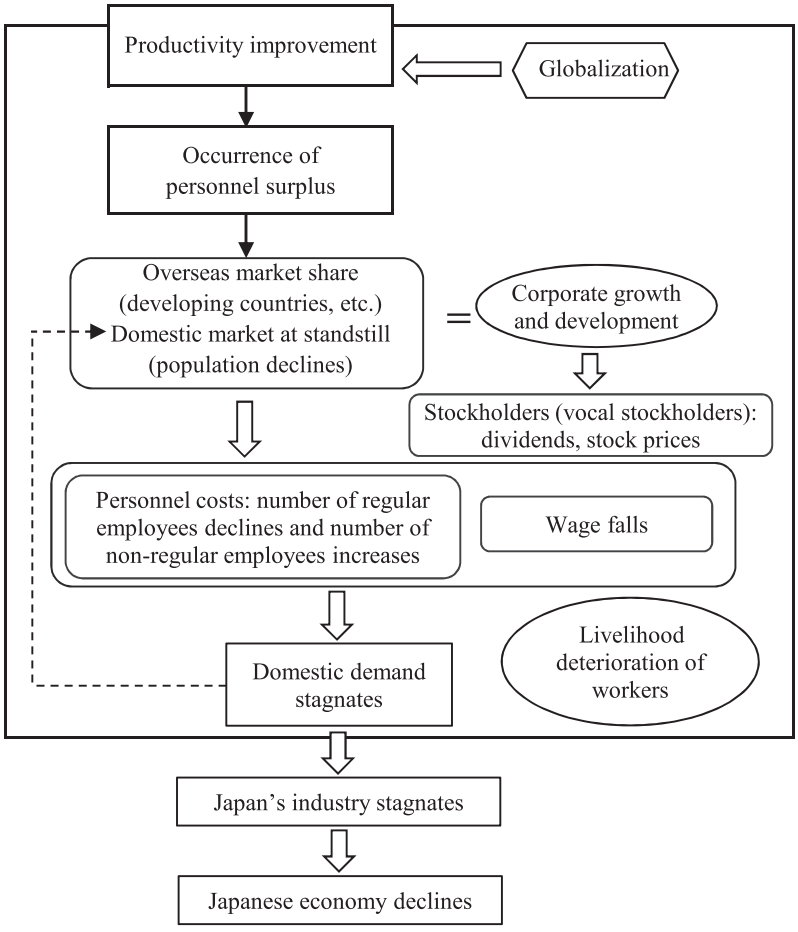
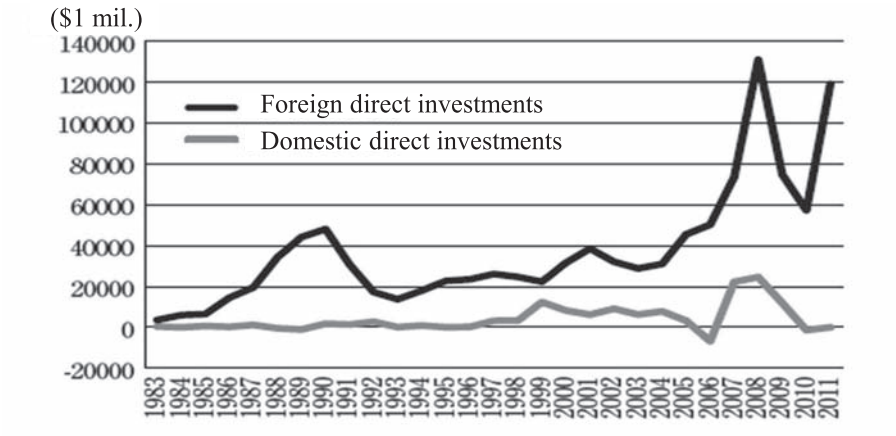


Figure 4. Estranged Labor-Management Relations

when productivity improvement generated surplus personnel during the high economic growth period, in order to overcome this problem, Japanese corporations had no way but to create domestic market, expand their business and increase domestic demand; otherwise, they could not continue to grow. In addition, it was also inevitable for them to expand domestic demand through fair distribution. However, with increasing globalization, markets other than the Japanese market became accessible, and not a few markets including ones in developing countries were more attractive than the Japanese market. Furthermore, today's Japanese corporations have the strength to make inroads overseas. In the present day, when even technology and people can flow out the country, it has become possible for corporations to realize growth even if the domestic market does not expand, by undertaking overseas business development.

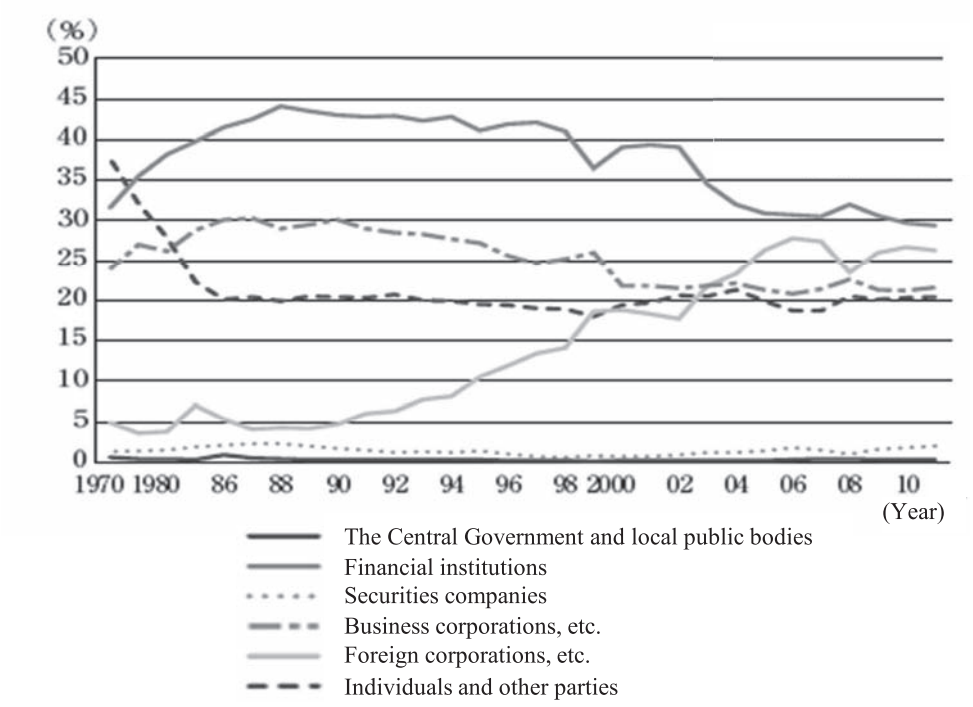
Moreover, as personnel cost in Japan is much higher than the rest of the world, under harsh economic conditions Japanese corporations sometimes have to streamline their



Source: Prepared by JETRO based on the Ministry of Finance's *State of the Balance of International Payments*, the Bank of Japan's *Foreign Exchange Market*, etc.

Figure 5. Foreign and Domestic Direct Investments

workforce in Japan and move operations overseas. While the unemployment rate has risen following the collapse of the asset-inflated bubble economy, overseas investments have been in a rising trend over the medium and long-term (Figure 5). Amid intense international competition, Japanese corporations have found the road to survival in overseas expansion as they streamline and restructure their domestic workforce. As a result, there has spread in Japanese society the situation where even regular employees cannot necessarily be guaranteed their employment until mandatory retirement age, and non-regular employees with low labor costs have increased in number. It is here, with corporations aiming for their own growth through overseas expansion and Japan's workers losing their jobs or being relegated to low-paying, unstable jobs, that "estranged labor-management relations," where corporations and workers are alienated, have arisen. Therefore, regardless of the economy prospering, only some corporations produced favorable business results and workers' real wages declined. Because of the effects of globalization, the impact of stockholders, who did not appear in the Three Guiding Principles, grows. Nowadays, foreign corporations and other parties who have been growing in number demand short-term distribution of profits, they have a strong tendency to respect the market mechanism, and there is much that runs counter to the principles of Japanese-style labor-management relations, where both labor and management practice self-control regarding short-term profits and work for further growth by expanding the pie in the medium and long-term (Figure 6). Today, the principle of investment, which is different from the principle of workers' livelihoods and the principle of corporate management, has crept into the labor-management relations mechanism. The "unified labor-management relations" of the high economic growth period has been overtaken by "estranged labor-management relations."



Source: Securities Exchanges nationwide, *Share Distribution Survey*.

Figure 6. Stock Investment Ratio by Investment Category

Incidentally, labor-management relations based on the mechanism in Figure 4 are a result of structural change mainly brought about by globalization, which will not fundamentally be changed by economic trends of the time. I finally mentioned it as a characteristic seen recently, in order to highlight the labor-management relations during the high economic growth period and to make the differences in the labor-management relations of the past and the present easier to understand. The current issues of labor-management relations, including what generated the relationships in Figure 4 and why the mechanism in Figure 4 presents ever-increasing labor problems, will be further reviewed some other time.

VIII. Summary

The previous study shows that labor-management relations were understood in a great variety of ways and used the analytical methods thought to be the most appropriate for analyzing the labor problems at the time. When considering the labor situation in postwar Japan and global trends, by placing corporations and labor unions— the main parties involved in forming employment relations to date—at the core of labor-management relations, their characteristics and problems are most markedly revealed. Taking the annual spring labor

negotiations noted earlier as an example, they indicate the social standard in terms of wage determination in Japan and in this sense the relationship between corporations and labor unions has a presence in society. However, from the viewpoint of the present day, it must be said that it was indeed a characteristic of the labor-management relations in the high economic growth period that labor unions could be regarded as one of two parties in the relations.

Labor-management relations during the period of high economic growth were a labor-management framework in which corporations and workers could grow together and have a mechanism to reconcile conflicting principles in a general sense, productivity improvement and employment security, which were gained after long years of intense disputes. These Japanese-style labor-management relations played an important role during the high economic growth period. It was not that they could realize labor-management relations which enabled them to have stable employment relations because it was such a particular time of high economic growth, but that they could achieve the high economic growth as a result of their effort to build stable employment relations on often-antagonistic labor-management framework. History indicates that labor and management will continue to play important social roles in Japan. What kind of society it will be the aim to build in Japan from an industrial point of view and in terms of a community where people can live stable lives is closely related to what kind of labor-management relations will be formed and what kind of mechanism will be constructed there in order to overcome a variety of problems.

References

Abegglen, James C. 1958. *Nippon no keiei (The Japanese Factory)*. Trans. Kuniyoshi Urabe. Tokyo: Daiamondosha.

Abo, Tetsuo, ed. *Nihon kigyo no Amerika genchi seisan* [Local production by Japanese corporations in the U.S]. Tokyo: Toyo Keizai Shimposha.

Dore, Ronald. 1987. *Igirisu no kojo, Nippon no kojo: Roshi kankei no hikaku shakaigaku (British factory–Japanese factory: The origins of national diversity in industrial relations)*. Trans. Yasushi Yamanouchu and Koichi Nagayasu. Tokyo: Chikuma Shobo.

Dunlop, John. T. 1958. *Industrial relations systems*. Boston, MA: Harvard Business school.

Ebisuno, Sumiko. 2006. *Roshi kankei no henyo to jinzai ikusei* [Changes in labor-management relations and the development of human resources]. Tokyo: Keio University Press.

———. 2010. Koyo, shitsugyo kozo no henka to sono taio: Roshi kankei no shiten kara [Transformation of employment and unemployment structure, a perspective from industrial relations]. *The World Labour* 60, no. 4:2–13.

Economic Planning Agency. 1956. Showa 31-nendo nenji hokokusho [FY 1956 annual report]. Compliled and published by Economic Planning Agency.

Economic Stabilization Agency, ed. 1949. *Keizai genkyo no bunseki to kaisetsu: Dai sanji*

keizai hakusho [Analysis and interpretation of current economic conditions: Third economic whitepaper]. Tokyo: Bunkyosha.

Gordon, Andrew. 2012. *Nihon roshi kankeishi 1853–2010* [The evolution of labor relations in Japan, 1853-2010]. Tokyo: Iwanami Shoten.

Japan Productivity Center. 1965. *Seisansei undo 10 nen no ayumi* [10-year history of the productivity movement]. Tokyo: Japan Productivity Center.

———. 1985. Seisansei undo 30-nenshi [30-year history of the productivity movement]. Tokyo: Japan Productivity Center.

Japan Productivity Center for Socio-Economic Development. 2005. Seisansei undo 50-nenshi [50-year history of the productivity movement]. Tokyo: Japan Productivity Center for Socio-Economic Development.

Koike, Kazuo. 1991. *Shigoto no keizaigaku* [Economics of work]. Tokyo: Toyo Keizai Shinposha.

———. 1993. *Amerika no howaitokara* [White-collar workers in the U.S.]. Tokyo: Toyo Keizai Shinposha.

Mori, Goro, ed. 1981. *Nipon no roshi kankei sisutemu* [The labor-management relations system in Japan]. Tokyo: Japan Institute of Labour.

Nakayama, Ichiro. 1974. *Roshi kankei no keizai shakaigaku* [The Economic-sociology of labor-management relations]. Tokyo: Japan Institute of Labour.

Shimada, Haruo. 1988. *Hyumanwea no keizaigaku* [The economics of human-ware]. Tokyo: Iwanami Shoten.

Shirai, Taishiro. 1993. *Roshi kankeiron* [Labor-management relations theory]. Tokyo: Japan Institute of Labour.

Sugeno, Kazuo. 2003. *Rodoho* [Labor law]. Tokyo: Kobundo.

Tsuda, Masumi. 1980. *Roshi kankei* [Labor-management relations]. Tokyo: Nihon Keizai Shinbunsha.

Yasuba, Yasukichi, and Takenori Inoki, eds. 1989. *Kodo seicho* [High growth]. Tokyo: Iwanami Shoten.

High Economic Growth and Labor Law: Reciprocal Construction of the Japanese-Style Employment System and Labor Law

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The question of "high economic growth and labor law" may be examined from two aspects. The first would be to consider what sort of labor law was formed in relation to the employment system that lay behind it, based on the economic environment of high economic growth. The second would be to consider the influence exerted by labor law formed in this way on ways of designating employment systems during the period of high economic growth. As these two aspects are interconnected, however, this paper focuses on the correlation between the two. Using a fixed perspective on the relationship of reciprocal construction between law and society (i.e. the reciprocal relationship between the 'construction of law by society' and the 'construction of society by law'), it attempts to unravel the relationship of reciprocal construction between the Japanese-style employment system, said to have been formed and established during the period of high economic growth, and labor law based on this perspective, mainly drawing on principles of labor law cases from that time. As a result, (i) in terms of the construction of law by society, principles of case law at that time acknowledged the reality of the Japanese-style employment system, and expressed it in the form of fixed rules (norms). On the other hand, (ii) in terms of the construction of society by law, principles of case law expressed in that way became a force giving the impression that the "Japanese-style employment system" was a universal system in Japan, although in reality it was merely one part of Japan's employment system.

I. Introduction

High economic growth is said to have started in 1955, ten years after defeat in the war.[1] It was in the following year, 1956, that the government's Economic White Paper famously declared "Japan is no longer in the postwar period," and the phrase "economic growth" also appears in said White Paper. In other words, the phrase "economic growth" was expressed in the same breath as the memorable declaration that "Japan is no longer in the postwar period." However, the statements by the White Paper linking this end of the postwar period with economic growth actually suggested that Japan's economy would need to be modernized as a prerequisite for subsequent economic growth, and that it would not be at all easy to achieve this.[2] Nevertheless, the economic boom that started in 1955 vastly

[1]Naomasa Ito, *Kodo Seicho kara "Keizai Taikoku he"* [From high economic growth to "economic superpower"] (Iwanammi Bukku Retto: Shirizu Showashi, no. 13 [Iwanami booklet: Showa History, no.13]) (Tokyo: Iwanami Shoten, 1988), 7.

[2] After declaring that "Japan is no longer in the postwar period," the 1956 Economic White Paper asserted: "We are now about to face a different phase. Growth through reconstruction is over. Future growth will be supported by modernization." As literature examining the statement that "Japan is no

exceeded the awareness shown in the White Paper, ushering in high economic growth that continued for nearly 20 years. The economic environment represented by this high economic growth utterly transformed Japan's economy and social system.

The main task of this paper is to study what sort of labor law was formed in this economic environment of high economic growth, in connection with the social system lying behind the law. To fulfill this task, however, it will be necessary to establish fixed theoretical positions on (i) the relationship between law and social systems formed under certain economic environments (or, to be more general, the "relationship between law and society"), and (ii) the relationship between labor law formed under the economic environment of postwar Japan, i.e. exceptional "high economic growth," and the social system lying behind it (or, to be more general, "the relationship between a social system under high economic growth and labor law").

In Section II, therefore, after outlining the relationship between law and society (i.e. the rationale of "reciprocal construction of law and society"), the relationship between labor law under high economic growth and the Japanese-style employment system as a social system lying behind it will be broadly discussed. Then, a scenario will be drawn in order to verify the relationship of reciprocal construction between the Japanese-style employment system and labor law. Following this, in Section III, the relationship of reciprocal construction mentioned above will be studied in connection with several areas extracted from the scenario in Section II.

II Social Systems and Labor Law amid High Economic Growth

1. The Reciprocal Construction of Law and Society

Sidestepping the tricky sociological question of what exactly constitutes "law" and "society," we may define "society" as a collective term for communal existence that cannot be reduced to the level of individual human beings,[3] and "law" as the rules (norms) governing how such a society is formed. These rules (norms) may be further defined as comprising "positive law" (statutes and case law), backed by the force of authority, and "living law," which actually regulates the behavior of the people who comprise a society.[4] Based

longer in the postwar period" in relation to high economic growth, see Haruhito Takeda, *Kodo Seicho* [High economic growth] (Nihon Kindaishi, no. 8 [History of modern and contemporary Japan, no. 8]) (Tokyo: Iwanami Shoten, 2008).

[3] On the concept of "society," see Masachi Osawa, Shunya Yoshimi, and Seiichi Washida, eds., *Gendai Shakaigaku Jiten* [Encyclopedia of contemporary sociology] (Tokyo: Kobundo, 2012), 559ff.

[4] Here, the main focus is on the concept of "law" in legal sociology. On this point, see Yozo Watanabe, "Hochitsujo no Genjitsuteki Kozo [Realistic structure of legal order]" in *Hoshakaigaku to Hokaishakugaku* [Sociology of law and legal hermeneutics] (Tokyo: Iwanami shoten, 1959), 153ff., and Takeyoshi Kawashima, "Hoshakaigakun ni okeru Ho no Sonzai Kozo [Existential structure of law in legal sociology]" in *Kawashima Takeyoshi Chosakushu (Dai 1 kan)* [Collected works of Takeyoshi Kawashima (vol.1)] (Tokyo: Iwanami shoten, 1982), 114ff.

on these definitions, we see that the relationship between law and society is already inherent in the definition of "law." Law is constructed by society, and at the same time constructs that society. In this paper, the phrase "reciprocal construction of law and society" is used to describe the relationship between the two.[5]

Firstly, viewing the relationship between law and society in terms of the former being constructed by the latter, it can be said that law, while premised upon the demands of a given social system, acknowledges the reality of those demands, and consists of words (or "linguistic contrivances"[6]) that express them in the form of rules (norms).

Secondly, viewing the relationship between law and society in terms of the former constructing the latter, law can be said to influence a given social system and shape its realities. This influence of law on a social system is not merely a case of embodying certain conditions expressed by positive law (i.e. legal effects) in the social system; it also lies in giving people, through the concept of the universality of law, the impression that the social system expressed by the law is something "universal" and "natural." In that sense, law may be said to influence the construction of specific social systems.

Of course, "the construction of law by society" and "the construction of society by law" are related to each other, and a complex interaction arises between them. However, if law, through its universality, can be considered to affect the way people think, and, through this, to construct the specific shape of a social system, then retracing this process of construction should be a meaningful endeavor when considering the relationship between the law and the social system at a specific point in time. In particular, moreover, the approach outlined above is also important when considering the relationship between labor law formed in postwar Japan's economic environment of exceptionally "high economic growth," and the social system that lay behind it.

2. High Economic Growth and the Social System in Terms of Labor Law: Characteristics of the Japanese-Style Employment System

Assuming the relationship of reciprocal construction between law and society discussed above, labor law could be said to be closely linked to the system of employment, as the social system lying behind it. In particular, the employment system called "Japanese-style" (hereinafter referred to as the "Japanese-style employment system") is said to have formed and taken root during the period of high economic growth in postwar Japan,[7]

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[5] The following points are suggested by Iwao Sato, "Ho no Kochiku: Shushi Setsumei to Kicho Hokoku [Construction of law: Explanation of purpose and keynote report," *The Sociology of Law*, no.58 (2003); 1ff.

[6] Takeyoshi Kawashima, *Kagaku to shiteno Horitsugaku* [Jurisprudence as a science] (Tokyo: Kobundo, 1961), 31ff.

[7] For example, see Haruo Shimada, *Nippon no Koyo: 21-seiki no Saisekkei* [Employment in Japan: A re-design for the 21st century] (Tokyo: Chikuma Shobo, 1994), 48ff., and Michio Nitta, *Henka no Naka no Koyo Sisutemu* [Employment systems in the midst of change], (Tokyo: University of Tokyo Press, 2003), 11ff.

and as such, the question of "high economic growth and labor law" could also be described in terms of the relationship between this Japanese-style employment system and labor law.

Of course, there is debate over how far the specifics of the so-called Japanese-style employment system could be deemed characteristically "Japanese."[8] Nevertheless, there seems to be a broad consensus that the Japanese-style employment system comprises what are known as the "three sacred treasures"[9]: (i) the custom of long-term employment (life-long employment), (ii) treatment based on seniority (the seniority system), and (iii) company-based unions.

The first of these, i.e. the custom of long-term employment, involves carrying out most new hiring through mass recruitment of new graduates and guaranteeing opportunities for employment until retirement age, as long as there are no exceptional circumstances (e.g. serious misconduct on the part of the worker or serious business difficulty threatening the very existence of the enterprise). Under this practice, employers create frameworks for flexible placement without clearly defining workers' duties, and develop a personnel policy whereby they cultivate their workers' abilities through on-the-job-training while at the same time assigning them to a wide range of tasks.

In the second of the "three sacred treasures," i.e. treatment based on seniority, a worker's age and years of continuous service are used as important appraisal standards to determine wages (pay raises), status (promotions) and other aspects of treatment. Under the job-ability qualification system established during the high economic growth period, a worker's initial grade (starting wage) is determined by the worker's age and academic background, and the worker thereafter receives pay raises and promotions depending on the number of years served and personnel evaluations. In this seniority-based treatment system, wages do not necessarily correspond to a worker's contribution at a given point in time, and so the worker has to continue working until retirement age to reach a final tally of contributions and wages (i.e. to recover the contribution made). This is the point at which seniority-based treatment and the custom of long-term employment converge.

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[8] This problem was raised in the era of high economic growth by Mikio Sumiya, "Nihonteki Roshi Kankeiron no Saikento: Nenkosei no Ronri wo Megutte (Jo) and (Ge) [Japanese labor-management relations revisited: A discussion of nenko system (Part 1) and (Part 2)]," *The Monthly Journal of the Japan Institute of Labour,* no. 185 (1974): 2ff., and no.187 (1974): 2ff.

[9] According to Kazuyoshi Koshiro "Sanshu no Jingi [Three sacred treasures]," *The Monthly Journal of the Japan Institute of Labour,* no.443 (1997): 2ff., the collective term "three sacred treasures" describing the main elements that characterize the Japanese-style employment system was used by the then Vice-Minister for Labour Masao Matsunaga in the "Introduction" to the Ministry of Labour's translation of the *OECD Report on Labor in Japan* (Tokyo: Japan Institute of Labour, 1972). This included the following statement. "The central concerns and problem awareness when the OECD studied Japan's labor force policies were the degree to which employment and wage practices involving lifelong employment, wages based on seniority, and individual company-based unions formed on the basis of a uniquely Japanese culture—collectively referred as the 'Japanese Employment System' in the report—have contributed to Japan's economic growth as the so-called 'three sacred treasures,' how are they being transformed today, and what issues they are posing for labor force policies."

The third "treasure," company-based unions, refers to labor unions formed by organizing the regular employees of individual companies. Postwar Japanese labor unions were organized by "equalizing" blue- and white-collar workers, employee categories with fundamentally differing interests, based on their shared identity as regular employees of the same company. However, in the closed internal labor market of corporations, formed by the custom of long-term employment and seniority-based treatment, the organizational format known as company-based unions became the mainstream organization for regular employees with shared interests. When this Japanese-style employment system, which was formed and became established during the period of high economic growth, is viewed from the two perspectives of employment relations (i.e. individual relationships between workers and employers) and labor-management relations (collective relationships between labor unions or workers' collectives and employers), the following characteristics can be pointed out.

Firstly, from the perspective of employment relations, relative stability of employment until retirement age is realized for regular employees as members of the internal labor market; on the other hand, this also permits employers to have broad discretionary powers over personnel matters and labor conditions.[10]

Secondly, from the perspective of labor-management relations, relations between employers and groups of regular employees develop as company-specific labor-management relations operated by company-based unions.

3. A Scenario for Verifying the Relationship of Reciprocal Construction between the Japanese-Style Employment System and Labor Law

How did labor law in the era of high economic growth perceive the above-mentioned characteristics of the Japanese-style employment system, which was formed and became established in that era, and with what sort of norms (rules) did it express them (i.e. the aspect of construction of law by society)? And what sort of role did labor law thus expressed as norms (rules) have in creating the Japanese-style employment system (i.e. the aspect of construction of society by law)?

To verify this relationship of reciprocal construction between the Japanese-style employment system and labor law, several areas of employment relations and labor relations will need to be picked out and subjected to specific study. Here, however, to identify which areas need to be studied, the author would like to create a certain scenario for setting areas, using principles of case law pertaining to the series of labor laws thought to have been formed in response to the Japanese-style employment system in the period of high economic growth[11] as a raw material.[12] Then, when creating this scenario, reference will be made

[10] This characteristic was already highlighted by Michio Tsuchida, "Nihonteki Koyo Kanko to Rodo Keiyakuron [Japanese-style employment practices and labor contract theory]," *Journal of Labour Law*, no. 73 (1989): 33.

[11] As there is a time lag between the establishment of the social system and the emergence of case law (court cases based on principles of case law), case law here mainly refers to Supreme Court

to the concept of "flexibility" proposed by Professor Takashi Araki[13] and applied to the understanding of the relationship between the Japanese-style employment system and labor law by Professor Yuichiro Mizumachi.[14] "Flexibility" is a concept that enumerates how the employment system responds to economic fluctuation affecting the labor market. It is called external flexibility when regulated by the functions of the external labor market, and internal flexibility when by those of the internal labor market.

(1) The Japanese-Style Employment System and Labor Law in Terms of External Flexibility

Firstly, the Japanese-style employment system, based on the custom of long-term employment (the lifelong employment system), is said to lack external flexibility in hiring and firing regular employees flexibly to suit business fortunes or economic conditions. As the hiring of regular employees involves mass hiring of new graduates, a characteristic of the practice of hiring regular employees in Japan is that they go through a "tentative hiring decision" stage and a "probationary period" before they are properly hired. The legal status of the tentative hiring decision and probationary period then becomes problematic. However, in the case of tentative hiring decision for new graduates, it was judged in the 1979 Dai Nippon Printing Case (Sup. Ct., 2nd Petty Bench, Judgment, Jul. 20, 1979, 33 Minshu 5-582) that a labor contract could be formed through such a tentative hiring decision. In the case of the probationary period, similarly, the formation of a labor contract was confirmed by the 1973 Mitsubishi Plastics Case (Sup. Ct., Grand Bench, Judgment, Dec. 12, 1973, 27 Minshu 11-1536).

Meanwhile, the dismissal of regular employees is subject to constraints designed to preserve the relative stability of employment. Even so, in the 1975 Nihon Shokuen Seizo Case (Sup. Ct., 2nd Petty Bench, Judgment, Apr. 25, 1975, 29 Minshu 4-456) and the 1977 Kochi Broadcasting Case (Sup. Ct., 2nd Petty Bench, Judgment, Jan. 31, 1977, 268 Rodo Hanrei 17), the courts created a legal doctrine on the abuse of the right to dismiss (doctrine of abusive dismissal), and imposed two stringent requirements of objective rationality and social appropriateness when dismissing regular employees. At the same time, though a lower court judgment as an extension of this, the courts developed a framework for making

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judgments between the 1960s and the latter half of the 1980s.

[12] The reason why case law (and principles of case law) is used as a main material is as follows. That is, the basic framework of statutes that govern labor matters (such as the Constitution, the Labor Union Act and the Labor Standards Act) had already been completed immediately after defeat in the war and before the period of high economic growth, and case law occupies a more important position in clarifying the precise nature of labor law formed in the period of high economic growth.

[13] Takashi Araki, *Koyo Shisutemu to Rodo Joken Henko Hori* [The employment system and the legal principle of changing labor conditions] (Tokyo: Yuhikaku, 2001), 7–10, 212–13.

[14] Yuichiro Mizumachi, *Rodoho* [Labor law] (Tokyo: Yuhikaku, 2012), 50–56. When writing this paper, numerous suggestions were taken from Chapter 2 "Functions of Labor Law" in Part 1 of this book.

judgments, in which rigorous examination based on four conditions was also applied to adjustment dismissals carried out for business management reasons.

On the other hand, based on the Japanese-style employment system, non-regular employees were placed outside this system and made to bear the role of ensuring external flexibility as a regulating valve for employment. Here again, in the 1974 Toshiba Yanagi-machi Factory Case (Sup. Ct., 1st Petty Bench, Judgment, Jul. 22, 1974, 28 Minshu 5-927) and the 1986 Hitachi Medico Case (Sup. Ct., 1st Petty Bench, Judgment, Dec. 4, 1986, 486 Rodo Hanrei 6), the courts recognized that the legal doctrine on abuse of the right to dismiss may be applied to cases of dismissal and termination of employment of non-regular employees. They nevertheless asserted that there is a "rational difference" between regular and non-regular employees, even in cases where the application of said legal doctrine is recognized, and that it would be "rational" for non-regular employees to be dismissed or have their employment terminated ahead of regular employees.

(2) The Japanese-Style Employment System and Labor Law in Terms of Internal Flexibility

As shown above, the Japanese-style employment system was also supported by principles of case law in relation to hiring and dismissal, and its structure was meager in external flexibility. On the other hand, it had internal flexibility that permitted various discretionary measures by employers and made full use of company-specific labor relations. Moreover, this internal flexibility was also given certain normative expression by principles of case law.

Internal flexibility comprises a quantitative flexibility, whereby the volume of business costs is altered by adjusting wage amounts and hours worked, and a qualitative flexibility, whereby the nature of the corporate organization is changed qualitatively by flexible changes in personnel and flexible changes to workplace rules, at the discretion of the employer. Important areas in the relationship between the Japanese-style employment system in the period of high economic growth and principles of case law in labor law are those related to the latter, i.e. qualitative flexibility.

Firstly, as already stated above, the Japanese-style employment system guaranteed relative stability of employment for regular employees, as the component members of the internal labor market, and granted employers extensive powers of discretion on personnel matters, with employees frequently and flexibly transferred or farmed out. In terms of case law, though somewhat shifted from the period of high economic growth in temporal terms, these extensive powers of discretion on personnel matters by employers were confirmed by the judgment in the 1986 Toa Paint Case (Sup. Ct., 2nd Petty Bench, Judgment, Jul. 14, 1986, 477 Rodo Hanrei 6). This legal precedent recognized the extensive rights of an employer to order transfers of personnel based on labor contracts, but at the same time placed certain constraints on employers' powers of discretion by using the framework of the abusive exercise of a right. However, these constraints were limited to extremely exceptional

cases.

Secondly, on flexible changes to workplace rules under the Japanese-style employment system, changes to work rules by employers have played an important role. In Japan, employers are entitled to create and change work rules unilaterally without obtaining their workers' consent (Labor Standards Act, Article 90 [1]) but the judgment in the 1968 Shuhoku Bus Case (Sup. Ct., Grand Bench, Judgment, Dec. 25, 1968, 22 Minshu 13-3459) made a ruling on the validity of an employer creating and altering work rules, to the effect that, as long as the content is rational, it can be binding on the worker. This marked the starting point for subsequent case law. Under this, even if a worker were to oppose changes to workplace rules, the employer can create new workplace rules by rationally changing work rules. The legal principle of changing work rules in case law had the function of transferring the employer's extensive powers of discretion, a characteristic of the Japanese-style employment system, to the content of labor contracts.

Thirdly, something else that contributed to flexible changes to workplace rules under the Japanese-style employment system was the flexibility of company-specific labor relations and the creation of a framework based on case law. As already stated above, under the Japanese-style employment system, labor unions took the organizational format of company-based unions, and substantial labor-management negotiations were also held at individual company level. Labor relations in Japan are legally governed by the Constitution and the Labor Union Act. These have frameworks enabling the organizational formats of labor unions and styles of labor-management negotiations to be broadly tolerated, and in that sense, positive law broadly recognizes flexible labor-management negotiations. It should be noted with care, however, that under the principle of case law, in the 1979 Japanese National Railways Sapporo Train Sector Case (Sup. Ct., 3rd Petty Bench, Judgment, Oct. 30, 1979, 33 Minshu 6-647), a certain framework was created in connection with the nature of action by company-based unions.

III. High Economic Growth and Labor Law: Some Aspects of Reciprocal Construction

As areas that require special attention when verifying the relationship of reciprocal construction between the Japanese-style employment system and labor law in the period of high economic growth, based on the above discussion, one may cite "the hiring process," "dismissal," "changes in personnel," "work rules" and "company-based unions and labor relations." In the following, owing to lack of space, the first three of these will be subjected to slightly detailed analysis.

1. The Hiring Process: The "Tentative Hiring Decision" and the "Probationary Period"

A kind of "common awareness" concerning the Japanese-style employment system,

whereby a "standard worker" is regarded as one who enters a company immediately after graduating from education then continues to work for the same company, is said to have taken shape in the process of high economic growth. Behind this lay the career pattern of male regular employees (including blue-collar workers) in large manufacturing corporations that propelled the high economic growth. And this career pattern involved a hiring system of "uninterrupted movement"[15] from school to occupations, with the periodical hiring of new graduates as its starting point.

Based on this hiring system, companies in the period of high economic growth responded to the tightness of the new graduate labor market by initiating a procedure known as the "tentative hiring decision." This involved carrying out their recruitment and hiring selection for prospective new graduates long before their scheduled time of graduation, and thus securing the services of persons they would eventually decide to hire after graduation. This tentative hiring decision was a formal indication that the company had decided to hire and the prospective graduate intended to join the company immediately after graduating, and was normally carried out through notification of a tentative hiring decision.

While the tentative hiring decision actually created expectation and constraints on both parties, to the effect that the hiring would take place, it was not necessarily clear what nature the tentative hiring decision had in legal terms. At first, there were two approaches to this question. In the first of these, (i) the "process of contract formation theory," the point at which a labor contract was established was seen as the moment when a letter of appointment was issued during the initiation ceremony in April; the process until then had merely one of forming contracts, including the tentative hiring decision. In the second approach, (ii) the "reservation theory," the tentative hiring decision was treated as a "reservation," whereby a labor contract would be concluded upon graduation.[16] Both of these approaches were challenged by the Supreme Court's judgment in the 1979 Dai Nippon Printing Case.[17] This was the case of a 4th-year university student who had taken a company's entrance examination based on a recommendation from the university, had received written notification of a tentative hiring decision in July of the year before graduation, and had submitted a

[15] Shinji Sugayama, *"Shusha" Shakai no Tanjo* [Birth of the "corporate" society] (Nagoya: The University of Nagoya Press, 2011), 448. Sugayama describes the situation as follows: "Workers would now enter employment immediately upon graduating from school, and then continue working for the same company until retirement or close to retirement age… While this mainly involved male workers in the large corporate sector that has led high economic growth, it expanded beyond differences in educational background between junior high school, senior high school and university graduates and differences in occupational skill between white collar and blue collar workers. If anything, it created a common awareness that this was a "standard" occupational path for company employees." (445).

[16] On the process of forming labor contracts, including these trends in legal theory, see Yuichiro Mizumachi, "Rodo Keiyaku no Seiritsu Katei to Ho [Process of formation of labor contracts and the law]" in *Rodo Keiyaku* [Labor contracts], ed. Japan Labor Law Association (Tokyo: Yuhikaku, 2000), 41ff.

[17] Dai Nippon Printing Case, Sup. Ct., 2nd Petty Bench, Judgment, Jul. 20, 1979, 33 Minshu 5-582.

promissory note to the company. The judgment ruled that it was "reasonable to construe that a labor contract retaining rights of dismissal based on the five grounds for withdrawing a tentative hiring decision stated in the promissory note had been established." The Supreme Court thus overturned the conventional view that a labor contract is not in any sense established by a tentative hiring decision (as in [i] or [ii] above), and recognized that a labor contract could be formed in connection with a tentative hiring decision to a new graduate (adoption of the "labor contract theory").

This Supreme Court precedent in the Dai Nippon Printing Case was a judgment on a tentative hiring decision in the year in question by the company in question, but the case itself was a general case for prospective new university graduates. In fact, the Supreme Court also premised its judgment on the recognition that "Considering Japan's employment situation, it is normal practice for prospective new university graduates, having once entered the relationship of a tentative hiring decision with a specific company, to reject opportunities and possibilities for employment with other companies in expectation of taking up employment after graduation, irrespective of whether the offer is accompanied by the retention of dismissal rights."

While the above relates to tentative hiring decisions as a component of the hiring system, in the periodical hiring of new graduates, it is normal practice for there to be a further period of 1–6 months to judge job aptitude until the recruit is formally hired, even after employment has started via the tentative hiring decision. This is known as the probationary period. In the hiring system for new graduates, the gist of the system is that job aptitude needs to be carefully judged before full hiring, but in reality, it is not so much a period for judging aptitude as a regular employee, as a period of basic training. How to appraise the legal nature of this probationary period then becomes a problem in connection with an employer's refusal of full hiring. On the question of whether or not a contract during a probationary period is the same as a labor contract after full hiring, the Supreme Court, in its judgment on the 1973 Mitsubishi Plastics Case,[18] ruled that a labor contract retaining a degree of dismissal rights is formed, and therefore held that it is the same as a labor contract after full hiring.

Thus, on the subject of tentative hiring decisions and probationary periods as components of a unique hiring system for regular employees established in the period of high economic growth, the Supreme Court, in each case, adopted the rationale that labor contracts are formed. However, this reflects the fact that "hiring" in the Japanese-style employment system described above was not a question of employing new recruits for specific occupations on condition of certain skills, but was taken as a starting point for developing vocational ability in a general sense, based on a long-term perspective. In this sense, the Supreme Court's principles of case law on tentative hiring decisions and probationary periods effectively recognized basic aspects of the realities of hiring in the Japanese-style em-

[18] Mitsubishi Plastics Case, Sup. Ct., Grand Bench, Judgment, Dec. 12, 1973, 27 Minshu 11-1536.

ployment system, and expressed these linguistically in the form of legal rules (norms). However, the new graduate hiring system was only customary among large corporations; in small and medium-sized enterprises, workers who changed jobs were frequently hired in mid-career. In the case law mentioned above, the Supreme Court noted most carefully that they were judgments limited to the cases in question. Nevertheless, although the rationale that it is standard for a person to enter employment immediately upon graduating from school, and then to continue working for the same company until retirement or close to retirement age has become general, it cannot be denied that the Supreme Court's principles of case law on tentative hiring decisions and probationary periods premised upon the hiring system in large corporations has had some kind of effect.

2. Dismissal: Legal Doctrines on Abuse of the Right to Dismiss and Adjustment Dismissal

(1) Legal Doctrines on Abuse of the Right to Dismiss

According to Professor Michio Nitta, the long dispute between labor and management in large Japanese corporations from the 1950s to the 1960s culminated in "a mutual exchange of commitment in which, on the one hand, workers would not quit a company once it had employed them and would continue to work diligently, in return for which the management would not dismiss workers unless they committed acts of serious misconduct or the company itself fell into a management crisis"[19]—in other words, the establishment of an "agreement" on long-term employment or "lifelong employment." However, this agreement was not one that was clearly expressed in writing as work rules, contracts, etc., but was nothing more than a "tacit assumption" for temporary convenience when entering into a contractual relationship. Nevertheless, by virtue of their accumulation during the period of high economic growth, these "agreements" became customary practice for regular employees in large corporations. In legal terms, the tacit assumption that "management would not dismiss workers unless they committed acts of serious misconduct or the company itself fell into a management crisis" was nothing more than the conclusion of a labor contract with no specified term until statutory retirement age; it was not a guarantee of employment in the legal sense. Rather, the Labor Standards Act enacted after the war established a period of notice for dismissal and other fixed legal provisions for labor contracts with no specified term, based on the premise of maintaining the principle of freedom to dismiss under the Civil Code.

Specifically, the Labor Standards Act set certain provisions on the premise of the freedom to dismiss, providing for restrictions on dismissal before and after childbirth and in cases of industrial accidents (Article 19) and an obligation to give advance notice of dismissal (Article 20), while also prohibiting discriminatory dismissal on grounds of nationality, creed or social status (Article 3). However, principles of case law had imposed limita-

[19] Nitta, *supra* note 7, at 20.

tions on the freedom of dismissal itself since the 1950s. A passage in a certain lower court case gives the following reason for this: "Japan's labor market lacks fluidity, and not only did employers once have an overwhelming advantage, but also the labor unions did not have sufficient solidarity or negotiating power. Moreover, in that systems of wages ranked by seniority and large retirement payoffs have been adopted on the premise of long-term employment, once a worker has been dismissed, regardless of age or sex, it is difficult for that worker to obtain equal or better working conditions such as wages, job grade and calculation of severance pay, and to find employment elsewhere immediately. As such, dismissal can deal a massive blow in terms of subsistence. In view of this, the court has weighed these circumstances of workers and the business-related claims asserted by the employer against each other, and has taken the step of imposing a restriction based on these legal principles on the basic principle of freedom to dismiss, in order to make a reasonable distinction in Japanese society."[20] "These legal principles" that impose a restriction on the basic principle of freedom to dismiss refer to the "principle of good faith or the legal principle of abuse of rights."

Thus, the legal doctrine of dismissal, whereby dismissal without rational justification is deemed an abuse of rights and therefore null and void, came to occupy the majority of lower court cases in the 1950s.[21] The Supreme Court judgment in the 1975 Nihon Shokuen Seizo Case[22] then formulated the flow of these lower court precedents as the "legal doctrine on abuse of the right to dismiss," asserting that "even when an employer exercises its rights of dismissal, it will be void as an abuse of the right if it is not based on objectively reasonable grounds so that it cannot receive general social approval as a proper act."

This Nihon Shokuen Seizo Case was a case in which there were problems in the existence or lack of grounds for dismissal and the rationality thereof, and the point of contention was whether dismissal based on a union shop agreement against workers expelled from labor unions should be permitted. In the 1977 Kochi Broadcasting Case, by contrast, the point of contention was whether or not an employee can be dismissed even when there are rational grounds for dismissal. In this Kochi Broadcasting Case, the Supreme Court[23] con-

[20] The Singer Sewing Machine Case, Tokyo Dist. Ct., Judgment, May 14, 1969, 568 Hanrei Jiho 87. A point of contention in this case was that the legal principle of dismissal under Japanese law had been applied to an American national working for an American company. In that connection, it is thought to have highlighted the characteristics of Japanese legal principles.

[21] Keiichiro Hamaguchi, *Nihon no Koyo to Rodoho* [Japanese employment and labor law] (Tokyo: Nihon Keizai Shinbunsha, 2011), 74. On postwar transitions in the legal principle of dismissal, see Takashi Yonezu, "Kaikokenron [Dismissal Rights Theory]," in *Sengo Rodoho Gakusetsushi* [History of postwar labor law theory], ed. Tsuneki Momii (Tokyo: Junposha, 1996), 657ff., and Shinobu Nogawa, "Kaiko no Jiyu to Sono Seigen [Freedom of dismissal and restrictions on it]," in *Rodo Keiyaku* [Labor contracts], ed. Japan Labor Law Association (Tokyo: Yuhikaku, 2000), 154ff.

[22] Nihon Shokuen Seizo Case, Sup. Ct., 2nd Petty Bench, Judgment, Apr. 25, 1975, 29 Minshu 4-456.

[23] Kochi Broadcasting Case, Sup. Ct., 2nd Petty Bench, Judgment, Jan. 31, 1977, 268 Rodo Hanrei 17.

firmed that a review of "propriety" is still required, even if grounds for dismissal exist, in that "even where there are objective reasons for a dismissal, and an employer does not always have the right to dismiss. If, under the specific circumstances of the case, the dismissal is unduly unreasonable so that it cannot receive general social approval as a proper act, the dismissal will be void as an abuse of the right of dismissal."

In both of these cases, it was confirmed that dismissal is "null and void" if the exercise of dismissal rights is judged to have been an abuse. Thus, as a result of these two Supreme Court precedents, a "legal doctrine on abuse of the right to dismiss" consisting of three elements ([i] grounds for dismissal need to be rational, [ii] dismissal can be deemed proper in terms of social norms, [iii] the dismissal is made null and void by the effect of abuse of the right to dismiss) has been established as a principle of case law.

In this way, the "agreement" on long-term employment, which became customary among regular employees of large corporations in the period of high economic growth and formed a "tacit assumption" as an "exchange of commitments" between the parties, was given legal expression as the "legal doctrine on abuse of the right to dismiss" by the Supreme Court. This gave the impression that the Japanese-style employment system involving long-term employment, which had previously been customary among large corporations, was now established as a universal system in Japan, including small and medium-sized enterprises.

(2) The Legal Doctrine of Adjustment Dismissal

The custom of long-term employment (including the legal doctrine on the abuse of the right to dismiss) that was established during the period of high economic growth had a specific significance in the period of employment adjustment in the 1970s. That is, during the economic recession triggered by the first oil crisis at the end of 1973, many companies were forced to restructure their workforce, but even now, particularly among large corporations, employment adjustments were carried out in accordance with a set procedure without disputes. This was because, on the one hand, the large corporation labor unions at the time had accepted the employment adjustment measures based on the course of labor-management cooperation, while on the other hand, the employers also followed careful procedures when making employment adjustment. Specifically, (i) they had first responded with measures such as overtime restrictions, suspension of mid-career hiring, transfer or farming out of personnel, suspension of new hiring, termination of temporary or part-time employment, and temporary closures or layoffs. Then, (ii) if these measures alone were not enough, as a final measure, they would offer voluntary redundancy accompanied by preferential severance packages and assistance with re-employment, and would avoid named redundancies as far as possible, as long as this did not lead to a crisis in business management. On top of this, in the labor relations of large corporations, talks were held and information

was disclosed on employment adjustment through labor-management consultation.[24]

While this was the case in large corporations, the situation was different for employment adjustment in small and medium-sized enterprises. In these enterprises, of the employment adjustment measures by large corporations mentioned above, there was little scope for personnel transfer or farming out, while there was also no room for temporary closures or layoffs. In many small and medium-sized enterprises, therefore, voluntary redundancy would be offered immediately, and if the surplus personnel could not be absorbed in this way, dismissals would then be made.

So how did the courts deal with this employment adjustment, and particularly adjustment dismissal in the 1970s? Firstly, previous research suggests that a principle of case law governing adjustment dismissal had not been fully established before the employment adjustment described above.[25] Although copious personnel adjustments were carried out immediately after the war, when the validity of adjustment dismissal was contested in such cases, the courts merely reviewed (i) the necessity of personnel cuts and (ii) the rationale behind the selection of workers to be dismissed. However, as employment adjustment procedures such as those described above became established in large corporations, the courts also came to incorporate these procedures as requirements for judging the validity of adjustment dismissal. Then, as lower court precedents accumulated, the legal doctrine of adjustment dismissal described here as the "four requirements of adjustment dismissal" became established.[26] These are the four requirements of (i) the necessity of reducing the

[24] Kazuo Sugeno, *Shin Koyo Shakai no Ho* [Law in the new employment society] (Tokyo: Yuhikaku, 2004), 69.

[25] *Ibid*., 70.

[26] The judgment in the 1975 Omura-Nogami Case (Nagasaki Dist. Ct., Omura Branch, Judgment, Dec. 24, 1975, 242 Rodo Hanrei 14), said to have first formulated the legal principle of adjustment dismissal, includes the following text. "So-called adjustment dismissal, the purpose of which is to adjust surplus manpower, unilaterally causes workers to lose their status as employees already acquired by means of labor contracts, for reasons not attributable to the workers' responsibility, and the result of this fundamentally destroys the lives of workers (and their families) who have maintained a subsistence through wages alone. Moreover, if this occurs during a recession, such workers will face certain difficulties in finding re-employment, making the impact of dismissal on them even more severe. In view of this, when an employer carries out adjustment dismissal, it is reasonable to construe that the employer should be subject to certain restrictions led by the principle of good will in labor contracts. Specifically, although the exercise of dismissal rights inherently belongs to the exclusive rights of the employer as the manifestation of the employer's management rights, and is in principle free, arbitrary exercise of those rights by the employer is by no means permissible, and, depending on the way the rights are exercised, it should be possible to be deemed an abuse of rights. This is not limited to dismissal rights alone but could be stated with regard to rights in general. Nevertheless, considering the special nature of dismissal rights, they are required to be exercised even more closely in accordance with the principle of good faith than in the case of other rights. In addition, this court construes that whether or not adjustment dismissal constitutes an abuse of rights should mainly be judged after taking into account the following perspectives. That is, firstly, that there is a pressing need, in that if dismissals were not made, the survival of the company would be threatened; secondly, that efforts have been made to absorb the surplus manpower using measures that cause less hardship than dismissal for workers, such as personnel transfer, temporary layoffs or offering voluntary redun-

workforce, (ii) efforts to avoid dismissals, (iii) justifiable reasons for selecting workers to be dismissed, and (iv) the appropriateness of procedures. The setting of these requirements embodied general or abstract requirements concerning the objective rationality and social reasonableness of dismissal under the legal principle on abuse of the right to dismiss in cases of adjustment dismissal, while incorporating the actual practice of employment adjustment at the time in legal judgments. Requirements (ii) (efforts to avoid dismissal) and (iv) (the appropriateness of procedures), in particular, are not found in case law on adjustment dismissal immediately after the war. As such, they reflect the trend toward implementing employment adjustment after exhausting measures other than dismissal (corresponding to [ii] above) and carrying out labor-management consultation in advance (corresponding to [iv] above) in the 1970s employment adjustment procedures described above.

Thus, the legal doctrine of adjustment dismissal was established in the second half of the 1970s, somewhat shifted temporally from the period of high economic growth. However, this reflects the employment adjustment procedure in large corporations, and differed from the reality of small and medium-sized enterprises. Nevertheless, many of the cases actually brought to courts in contention against adjustment dismissal had occurred in small and medium-sized enterprises. This gave rise to the appraisal that "Regulation of adjustment dismissal by the courts has resulted in the same efforts being applied in small and medium-sized enterprises as in large corporations, as far as possible."[27]

3. Changes in Personnel: Transfer and Farming out

The Japanese-style employment system guaranteed relative stability of employment for regular employees, as component members of the internal labor market, while granting employers extensive powers of discretion on personnel matters. What gave employers these extensive powers of discretion, in terms of legal language, were the principles of case law on transfer and farming out.

(1) Transfer

Transfer is a concept covering long-term changes to job duties or working locations, and includes both reassignments (changes of department within the same business site) and relocations (changes of working location). Although the emergence of transfer as a central aspect of employment management is said to have occurred after the establishment of the

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dancy; thirdly, that the situation has been explained to labor unions and/or the workers (or their representatives) and their acceptance has been sought, and efforts have been made to gain the understanding of the workers on the timing, scale, method and other details of personnel adjustment; and fourthly, that the standards for adjustment and the method of selecting personnel based on this are objective and rational. If adjustment dismissal sufficiently satisfies the above points, it can be deemed from the employer's point of view that, unless there are exceptional circumstances, the right has been exercised in good faith."

[27] Sugano, *supra* note 24, at 72.

Japan Productivity Center in 1955,[28] it was during the period of high economic growth that transfer became a frequent occurrence in many sectors. And what presented an institutional basis for this frequent occurrence of transfer was a system of wages so assembled as to prevent workers from suffering a disadvantage even when transferred—in other words, the system of seniority-based wages in which the main criteria were age and years of service. This is because, under the system of seniority-based wages, transfer basically had no impact on wages, even if the occupation, work content, working location and other aspects changed.

In the period of high economic growth, many companies incorporated provisions asserting the employer's comprehensive right to order transfer (e.g. "Depending on the circumstances of the job, the employer may order reassignments or relocations") in their work rules or labor contracts. In its judgment on the 1986 Toa Paint Case, the Supreme Court ruled that the employer acquires the comprehensive right to order transfer by virtue of such provisions, together with background circumstances.[29] Of course, even if the employer is granted the comprehensive right to order transfer, abuse of that right is not permitted. However, in judging such abuses of rights, the Supreme Court strictly limited the scope of abuse, asserting that "Whether or not a need for a transfer order exists in terms of work operations, a transfer order will not constitute an abuse of rights unless there are exceptional circumstances, such as when said transfer order is made for other unlawful motives or objectives, or when a worker is made to bear a disadvantage significantly exceeding the level that should normally be tolerated." In the Toa Paint Case, in fact, the disadvantage in family life suffered by a male worker who had an elderly mother, a wife on the organizing committee of an unlicensed nursery, and a 2-year-old child, and who was forced to take a post away from his family, was deemed not to be "a disadvantage significantly exceeding the level that should normally be tolerated by a worker." The transfer order was therefore deemed not to be an abuse of rights.

Thus, the Supreme Court gave legal expression to the reality of transfer frequently undertaken by employers, based on their extensive powers of discretion on personnel matters, and legally justified internal flexibility under the Japanese-style employment system.

(2) Farming out

Farming out is a change in personnel whereby, based on a farming out agreement between companies, a worker goes to work for the other company under orders, while still maintaining a labor contract relationship with the original company. In legal terms, this kind

[28] Hamaguchi, *supra* note 21, at 80. According to this note, the first of three principles of productivity decided when the Japan Productivity Center was established was that "improving productivity will ultimately expand employment, but from the viewpoint of the national economy, public and private sectors will cooperate in taking appropriate steps against temporary surpluses of manpower, to prevent unemployment as far as possible through reassignment, transfer and other means."

[29] Toa Paint Case, Sup. Ct., 2nd Petty Bench, Judgment, Jul. 14, 1986, 477 Rodo Hanrei 6.

of farming out constitutes an assignment of the employer's right to claim the provision of labor from the worker to a third party (the other company), and as such, the "consent of the worker" is required (Civil Code, Article 625 [1]). For this reason, in initial court precedents on farming out, it was thought necessary to have individual consent when sending a worker on farming out, as it differs from transfer in that the party receiving the provision of labor is different.

However, since the 1960s, i.e. the period of high economic growth, farming out to other companies in the same group going beyond transfer within the same company came to be a frequent event. In fact, farming out came to be undertaken on an everyday basis as one aspect of change in personnel indistinct from transfer, and with this, changes also appeared in case law. In particular, in a case where provisions on farming out were included in the work rules, internal procedures for farming out had been established as a system, and the possibility of farming out to an affiliate had been explained to the worker on joining the company, the court judged that the employer "had acquired the comprehensive right to order farming out based on the contract upon joining the company."[30] Thus, just as with transfer, a principle of case law recognizing the employer's comprehensive right to order farming out, particularly in the enlarged field of the internal labor market formed by corporate groups, emerged amid the systematic development and normalization of farming out in the period of high economic growth onwards. It may be said, then, that case law gave legal expression to farming out in the internal labor market, thus justifying it.

IV. Conclusion

In the foregoing, the relationship between the Japanese-style employment system and labor law in the period of high economic growth has been studied from the perspective of the reciprocal construction of law and society, drawing mainly on principles of case law. To close, the author will summarize what has been clarified by the discussion in this paper, from the dual aspects of the reciprocal construction of law and society—namely, the "construction of law by society" and the "construction of society by law."

Firstly, in terms of the "construction of law by society," the various principles of case law studied in this paper reveal an aspect whereby the law is truly is constructed by society, in the sense that these principles acknowledged the realities of the Japanese-style employment system and expressed them in the form of rules (norms).[31] The legal principles on

[30] Kowa Case, Nagoya Dist. Ct., Judgment, Mar. 26, 1980, 31 Ro Minshu 2-372.

[31] Of course, the principle of case law in labor law does not always have to be like this. It would also be possible to construct (relatively independent) legal principles at a distance from the Japanese-style employment system and other social realities; in fact, this kind of discussion actually existed during the period of high economic growth. On this point, see the author's "Rodo Keiyakuron [Labor contract theory]," in *Sengo Rodoho Gakusetsushi* [History of postwar labor law theory], ed. Tsuneki Momii (Tokyo: Junposha, 1996), 641ff. There, the author points out that there are three trends: "Labor contract theory reflecting Japanese-style employment customs as a reality in the com-

tentative hiring decisions and probationary periods, abuse of the right to dismiss, and adjustment dismissal expressed the employment stabilization function of the Japanese-style employment system, i.e. mass hiring of graduates and guaranteed employment until statutory retirement age, in the form of rules (norms). Meanwhile, the legal principles on trasfer and farming out expressed the function of acceptance of employers' powers of discretion in the form of rules (norms).

Secondly, what significance does the study in this paper have in terms of the "construction of society by law"? This point is related to the reality of the Japanese-style employment system as recognized by principles of case law. That is, even in the period of high economic growth when it was formed and became established, the Japanese-style employment system was almost solely established in large corporations and core companies; even if these were companies with 500 or more employees, the workers to whom they applied constituted only 25% of the total workforce.[32] It is beyond doubt that a reality differing from the Japanese-style employment system existed in small and medium-sized enterprises. But in spite of that, it was unquestionably the existence of these principles of case law, which by embodying the Japanese-style employment system, gave the impression that the Japanese-style employment system existed as a universal system in Japan, even though it only accounted for part of Japan's employment system. In that sense, the principles of case law became a force that sublimated (universalized) the Japanese-style employment system, which was merely one (albeit important) part of Japan's employment system, to something that represented the whole of it.

position of theory," "Labor contract theory distinguishing between Japanese-style employment customs as a reality and the composition of theory," and "Labor contract theory incorporating Japanese-style employment customs as a reality in the composition of theory within a range conforming to the basic principle of contracts."

[32] Sugano, *supra* note 24, at 6.

Research on Difficult Situations in Employment Placement Service

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Since fiscal 2008, the Japan Institute for Labour Policy and Training has developed a training program where the employees who engage in the employment placement service at Public Employment Security Offices (hereinafter called "Counselors") learn techniques to cope with actions of job seekers or employers that are difficult to handle (hereinafter called "Difficult Situations"). Prior to the development of the program, questionnaires were given to 85 counselors to obtain basic information regarding Difficult Situations. In this article, by analyzing these questionnaires and upon examining the structure and characteristics of Difficult Situations, we will discuss how to cope with Difficult Situations and suggest an outline of the training program development.

I. Introduction

Looking at the recent trend of the labor market in Japan, the monthly mean of the ratio of active job openings to applicants (seasonally adjusted and including part-timers) was 0.47 in 2009. It is the lowest since 1963 when statistics were taken for the first time. The unemployment rate (seasonally adjusted) was 5.1% in the same year. This high unemployment rate exceeding 5.0% has not been seen since 2003.

While the relationship between supply and demand has tightened in the Japanese labor market as just described, Public Employment Security Offices are needed to show the supply-demand adjustment more effectively. What constitutes supply-demand adjustments are as follows:

(1) The acquirement of job offers
(2) The provision of job offers to job seekers
(3) The matching of job seekers to job offers

Consequently, to show the supply-demand adjustment more effectively, Public Employment Security Offices would have to do the following:

(1) The acquirement of more high quality job offers
(2) The provision of job offers to job seekers in a more easy-to-understand form
(3) A more effective implementation of employment placement services of matching job seekers to job offers

In this research, vocational counseling[1] is focused on showing effective sup-

[1] Vocational counseling that this article is referring to is the consultation for the unemployed and career changers who need employment placement service at the Public Employment Security Offices.

ply-demand adjustments at Public Employment Security Offices. According to Article 4–1 of Employment Security Act, the term "employment placement" as used in this Act means receiving offers for posting job offerings and offers for registering as a job seeker and extending services to establish employment relationships between the job offers and the job seekers. In addition, according to Article 51–3 of the Act which explains vocational counseling, Public Employment Security Offices may offer consultation, necessary advice and other assistance to job seekers, etc. with respect to matters concerning employment placement, labor recruitment and labor supply. Thus vocational counseling can be thought of as a support for job seekers in order to increase the likelihood of finding employment through employment placement. Consequently, the development of vocational counseling ability of employees who engage in the employment placement service (hereinafter called "Counselors") can be thought of as one means of improving the function of supply-demand adjustments at Public Employment Security Offices.

The Japan Institute for Labour Policy and Training (hereinafter called "JILPT") has developed training programs for the counselors to improve their vocational counseling ability. As part of the development, JILPT has developed a program where the counselors learn techniques to cope with actions of job seekers or employers[2] that are difficult to handle (hereinafter called "Difficult Situations").

The present research aims to acquire basic data for the development of the training program. That is, the direction for the development is examined after understanding the following:

(1) What kinds of difficult situations are there? How often do difficult situations occur?
(2) What factor structures do difficult situations have?
(3) Do the attributes of the counselors such as gender, age, etc. make any difference regarding the level of difficulties they feel toward these situations?

II. Preliminary Survey

In order to collect data for this case study of Difficult Situations, from June to July of 2008, 99 trainees of JILPT who are counselors of Public Employment Security Offices were asked to list as many actual difficult situations they could remember on the questionnaire. From this questionnaire, Difficult Situation was defined as follows.

Difficult Situation is a situation where the counselor does not know how to cope with either job seeker's or employer's[2] actions at an employment placement service. The situation is usually initiated by the job seeker, but may in some occasions be initiated by the counselor or employer.

[2] In vocational counseling, the counselor contacts the employer by phone with the job seeker present.

135 Difficult Situations were collected from 76 participants. The collection rate was 76.8%. The 135 Difficult Situations were analyzed and grouped into 28 Difficult Situations. Three researchers collaborated and used the following criteria to group them:

(1) If the semantic contents of Difficult Situations were similar, they were considered one Difficult Situation.
(2) One Difficult Situation contains a single semantic content.

III. Main Survey

Participants

In July of 2008, questionnaires were sent to 85 trainees of JILPT who are counselors of Public Employment Security Offices and collected. All trainees participated. The collection rate was 100.0%.

Materials

Three Difficult Situations out of twenty-eight were not included, because they were not the object of vocational counseling.[1] The counselor's gender, age, and months of experience on vocational counseling were also asked.

Procedures

The participants were requested to evaluate the frequency of each Difficult Situation (hereinafter called "Frequency"), with each frequency given a number of points. The choices were: (a) never (1 point), (b) infrequent (2 points), (c) sometimes (3 points), and (d) often (4 points). The participants were also requested to evaluate the level of difficulty of each Difficult Situation (hereinafter called "Difficult Level"). The choices were: (a) none (1 point), (b) not much (2 points), (c) a little (3 points), and (d) very (4 points).

Attributes of Participants

Eighty-three participants were the object of analysis. Two participants were removed from this analysis, because they didn't have any vocational counseling experience. As for the gender of the participants, 68.7% were men. As for the age group, 30's comprised the most with 39.8%, 20's with 28.9%, and 50's with 1.2%. The average number of months of vocational counseling experience were 41.8 months (SD=40.6).

IV. Result 1

Factor Analysis was conducted to clarify the structure of Difficult Situations. The variance of the 83 participants' scores didn't have the extreme bias in terms of the mean and the SD of Difficult Level (Table 1). There were no situations where a specific choice was selected by more than 70% of the participants. Principal component analysis of 25 situations

Table 1. Mean, SD of Difficult Situations

Items	Frequency		Difficult Level	
	M	SD	M	SD
1. The employment conditions that the job seeker was requesting regarding working hours, wages, etc., did not match the requirements of the job offers.	3.446	.569	2.723	.686
2. The job seeker complained how bad the employees of the public employment agencies dealt with him/her.	2.578	.544	2.831	.746
3. The job seeker complained how bad the employer dealt with him/her.	3.060	.571	2.866†	.716
4. The job seeker did not know what kind of work he/she wants to do.	3.313	.603	3.157	.819
5. The job seeker wanted me to ask the employer questions that I thought were inappropriate.	2.602	.715	2.819	.735
6. The job seeker having a low probability of getting a job asked for an immediate introduction to a company due to his/her economic hardship.	2.952	.661	3.229	.770
7. The job seeker with no prior experience made an offer that required that specific experience.	3.265	.626	2.265	.607
8. The job seeker with no qualification made an offer which required that qualification.	3.133	.658	2.133	.620
9. The job seeker attached his/her mind to specific employment conditions regarding working hours, wages, etc., and refused to consider alternatives.	2.759	.709	2.506	.739
10. When I contacted the employer during the job placement service, the employer rejected the job seeker's offer due to his/her age or gender.	3.807	.426	3.036	.772
11. The job seeker asked detailed questions other than what was listed in the job offer and other than the content of the employer's registered information.	3.205	.728	2.663	.816
12. The job seeker made an offer that required specific educational background which he/she does not have.	2.831	.746	1.855	.608
13. The job seeker asked for consultation that was beyond the support of the public employment agency.	2.610†	.716	2.711	.789
14. The job seeker complained how the actual employment conditions, work contents, etc., differed from what was listed on the job requirement.	3.458	.548	3.241	.726
15. The job seeker did not seem to want to work.	2.855	.735	2.843	.969
16. There were no job offers that the elderly job seeker wanted.	3.759	.458	3.518	.651
17. I did not know how to express to the job seeker the company's situation that had problems.	2.675	.843	2.723	.915
18. The job seeker did not respond to any of my questions.	2.012†	.676	2.928	.985
19. The job seeker who made the offer did not appear for the job interview which I had set up.	3.000	.681	2.855	.683
20. The job seeker wanted to apply to several job offers at the same time without setting priorities.	3.268†	.754	2.434	.666
21. The job seeker asked for a type of job training that was not related to the job requirement he/she was seeking.	2.695†	.781	2.530	.817
22. The job seeker talked only about a general employment situation and system, and thereby there was no progress regarding his/her job hunting.	2.084	.719	2.542	.786
23. If the job seeker were to have a job interview, his/her appearance and attitude would have been unsatisfactory.	2.831	.640	2.487†	.758
24. Although the job seeker came up with a number of job offers, it was difficult to narrow down the choices.	2.952	.623	2.494	.705
25. The elderly job seeker mistrusted and complained about offers that had an age limit but were not specified in the job requirement.	3.530	.591	3.304†	.642

Note: Mean values with † indicate averages of 82 employees (one missing value).

was conducted using Varimax rotation. As a result, three factors were extracted, and Table 2 shows their rotated factor patterns.

Factor 1 was highly loaded by the following situations:

- The job seeker did not respond to any of my questions.
- The job seeker attached his/her mind to specific employment conditions regarding working hours, wages, etc., and refused to consider alternatives.
- The job seeker talked only about a general employment situation and system, and thereby there was no progress regarding his/her job hunting.

These situations suggest that the counselors either could not understand the job seeker's way of thinking regarding his/her own employment search, or thought it inappropriate.

- If the job seeker were to have a job interview, his/her appearance and attitude would have been unsatisfactory.
- The job seeker did not seem to want to work.

These situations which suggest the counselors considered the job seeker's attitude toward employment had problems, also had a high load.

From these, Factor 1 was interpreted as problems of job seeker's attitude and was called "the problem of attitude toward finding employment" (hereinafter called "Attitude Problem").

Factor 2 was highly loaded by the situations:

- The job seeker with no prior experience made an offer that required that specific experience.
- The job seeker with no qualification made an offer which required that qualification.
- The job seeker made an offer that required specific educational background which he/she does not have.

These situations suggest the incongruity of information between the job seeker and the job offer. Thus Factor 2 was called "the informational mismatch between the job seeker and the job offer" (hereinafter called "Informational Mismatch").

Factor 3 was highly loaded by the situations:

- The elderly job seeker mistrusted and complained about offers that had an age limit but were not specified in the job requirement.
- The job seeker complained how bad the employer dealt with him/her.
- The job seeker complained how the actual employment conditions, work contents, etc., differed from what was listed on the job requirement.

These situations suggest that the job seeker complained about the system and the information of the labor market and with the employer's correspondence. Also, the following situations:

- The job seeker complained how bad the counselors of the public employment agencies dealt with him/her.
- The job seeker wanted me to ask the employer questions that I thought were

Table 2. Rotated Factor Pattern Matrix of Difficult Situations

Items	Factor 1	Factor 2	Factor 3	h^2
18. The job seeker did not respond to any of my questions.	.683	-.037	-.070	.472
9. The job seeker attached his/her mind to specific employment conditions regarding working hours, wages, etc., and refused to consider alternatives.	.651	.233	.091	.487
22. The job seeker talked only about a general employment situation and system, and thereby there was no progress regarding his/her job hunting.	.501	.126	.159	.292
4. The job seeker did not know what kind of work he/she wants to do.	.471	.055	.149	.247
24. Although the job seeker came up with a number of job offers, it was difficult to narrow down the choices.	.468	.353	.135	.362
1. The employment conditions that the job seeker was requesting regarding working hours, wages, etc., did not match the requirements of the job offers.	.466	.028	.270	.291
23. If the job seeker were to have a job interview, his/her appearance and attitude would have been unsatisfactory.	.443	.285	.129	.294
15. The job seeker did not seem to want to work.	.375	.164	.087	.175
20. The job seeker wanted to apply to several job offers at the same time without setting priorities.	.366	.326	.165	.267
13. The job seeker asked for consultation that was beyond the support of the public employment agency.	.336	.146	.335	.246
7. The job seeker with no prior experience made an offer that required that specific experience.	.089	.837	.056	.712
8. The job seeker with no qualification made an offer which required that qualification.	.222	.816	.055	.719
12. The job seeker made an offer that required specific educational background which he/she does not have.	.402	.428	.173	.374
17. I did not know how to express to the job seeker the company's situation that had problems.	.106	.396	.272	.242
6. The job seeker having a low probability of getting a job asked for an immediate introduction to a company due to his/her economic hardship.	.224	.291	.016	.135
21. The job seeker asked for a type of job training that was not related to the job requirement he/she was seeking.	.228	.274	.244	.187
19. The job seeker who made the offer did not appear for the job interview which I had set up.	.145	.266	.263	.161
25. The elderly job seeker mistrusted and complained about offers that had an age limit but were not specified in the job requirement.	.069	.018	.822	.681
3. The job seeker complained how bad the employer dealt with him/her.	.219	.045	.639	.458
14. The job seeker complained how the actual employment conditions, work contents, etc., differed from what was listed on the job requirement.	-.037	.348	.515	.388
2. The job seeker complained how bad the employees of the public employment agencies dealt with him/her.	.180	-.045	.489	.274
16. There were no job offers that the elderly job seeker wanted.	.319	.340	.424	.398
11. The job seeker asked detailed questions other than what was listed in the job offer and other than the content of the employer's registered information.	.043	.357	.391	.282
10. When I contacted the employer during the job placement service, the employer rejected the job seeker's offer due to his/her age or gender.	.101	.268	.328	.190
5. The job seeker wanted me to ask the employer questions that I thought was inappropriate.	.083	.225	.311	.154
Percentage of Eigenvalue	22.47	6.071	5.411	
Cumulative Percentage of Eigenvalue (%)	22.47	28.54	33.95	

inappropriate.

These situations suggest that the job seeker complained to the counselor or asked him/her to do unreasonable things. Therefore Factor 3 was called “complaints about the labor market and towards the public employment placement service (hereinafter called “Complaint to Labor Market”).

V. Result 2

The relationship between Frequency and Difficult Level of each Difficult Situation was analyzed. Twenty-five Difficult Situations were plotted. The X-axis represents Frequency (“sometimes”+“often”) and the Y-axis represents Difficult Level (“a little” + “very”) (Figure 1).

If the proportion of the participants who recognized Frequency or Difficult Level was more than 50.0%, the situations were regarded as “the situation happens routinely” and “the difficult level is high.” The relationship between Frequency and Difficult Level of each situation was organized in four quadrants as follows:

Quadrant I: Frequency = Occur routinely, Difficult Level = high
Quadrant II: Frequency = Does not occur routinely, Difficult Level = high
Quadrant III: Frequency = Does not occur routinely, Difficult Level = low
Quadrant IV: Frequency = Occur routinely, Difficult Level = low

The results were as follows:

(1) There weren’t any situations belonging to Quadrant III.
(2) Situations where “Attitude Problem” were loaded high were dispersed within Quadrants I, II, and IV.
(3) Situations where “Informational Mismatch” were loaded high were dispersed within Quadrants I and IV.
(4) Situations where “Complaint to Labor Market” were loaded high were dispersed within Quadrant I.

VI. Result 3

A one-way analysis of variance (ANOVA) was calculated on Difficult Level using the following 3 variables:

(1) Gender (male, female)
(2) Age (20’s, 30’s, 40+)
(3) Experience (<6 months, between 6 months and 5 years, >=5 years)

Not counting participants who didn’t respond to the Difficult Level, 80 samples were used. The Factor Scores are the mean of Difficult Level of Factor 1 (1, 4, 9, 13, 15, 18, 20,

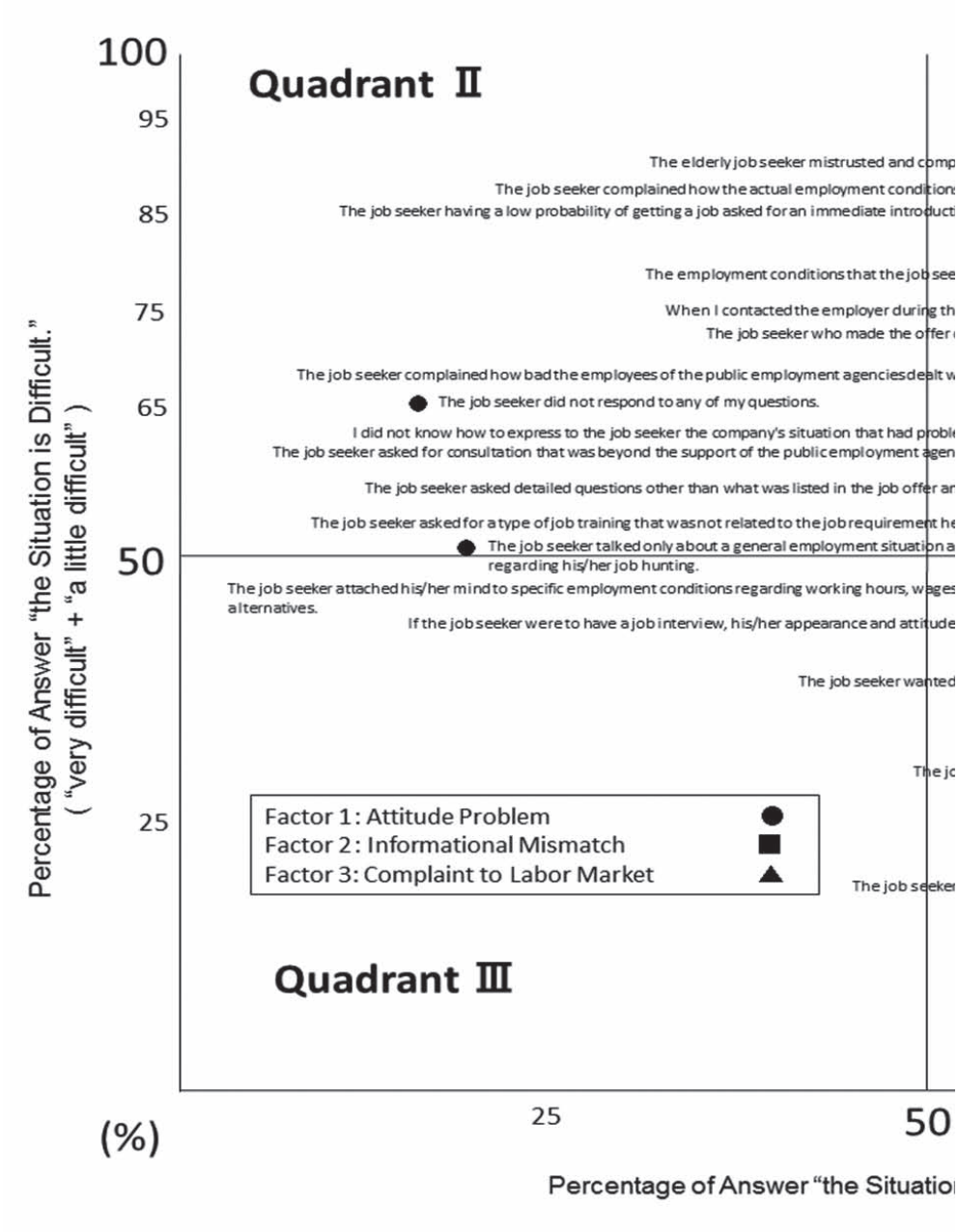
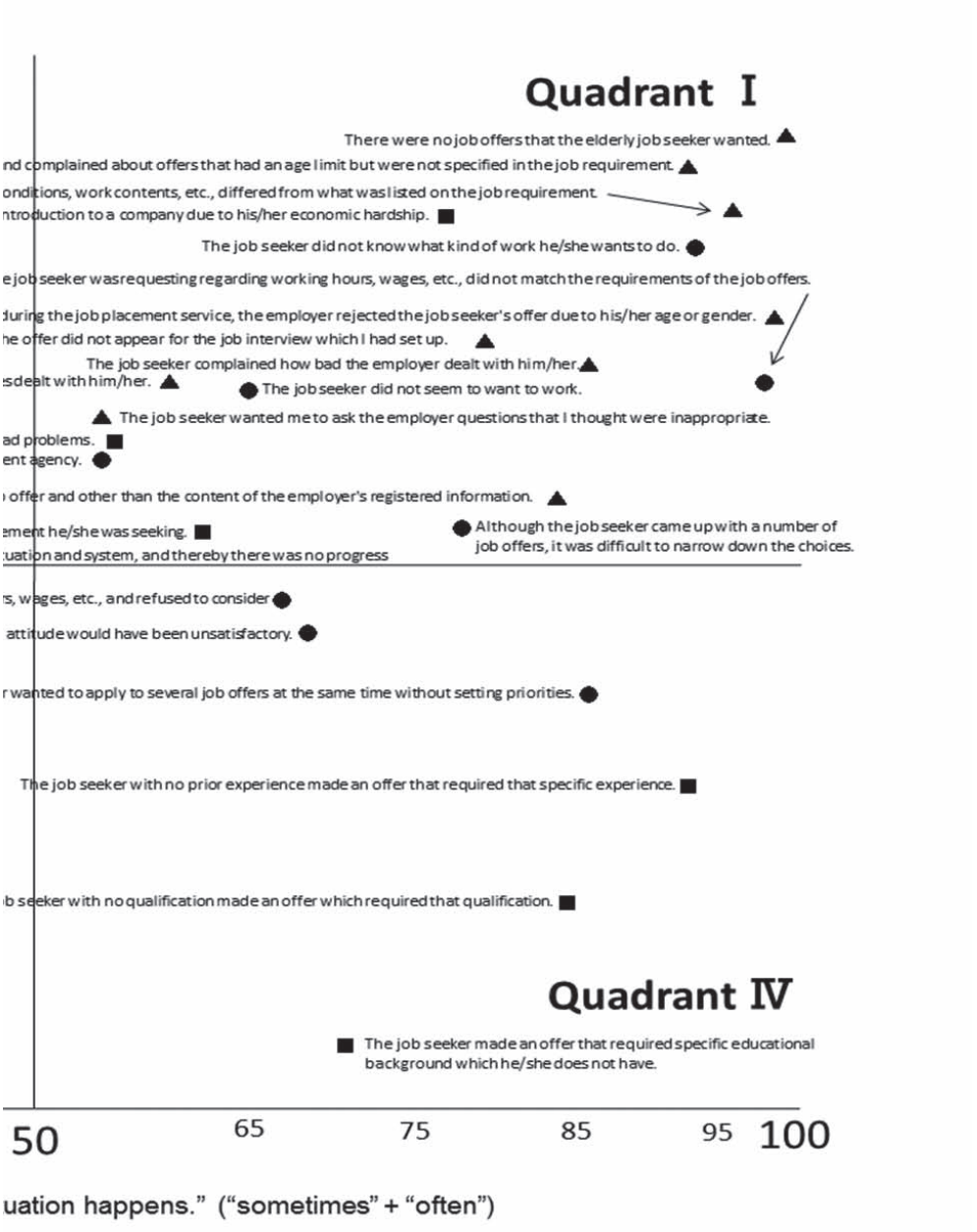


Figure 1. Relationship between Frequency



and Difficult Level of Difficult Situations

Table 3. Mean, SD and α value of Difficult Situations by Each Factor

	Number of Items	M	SD	α value
Attitude Problem	10	2.68	0.47	0.788
Informational Mismatch	7	2.5	0.43	0.701
Complaint to Labor Market	8	3.03	0.45	0.764

*p<.10, ** p<.05, ** *p<.01

Table 4. Comparison of Mean of Difficult Level by Gender

	Male (n=55)		Female (n=25)		
	M	SD	M	SD	$F_{1,78}$
Attitude Problem	2.67	0.49	2.69	0.43	0.034
Informational Mismatch	2.47	0.42	2.57	0.47	0.831
Complaint to Labor Market	2.98	0.47	3.16	0.38	2.712

*p<.10, ** p<.05, ** *p<.01

Table 5. Comparison of Mean of Difficult Level by Age

	20's (n=23)		30's (n=32)		40+ (n=25)		
	M	SD	M	SD	M	SD	$F_{2,77}$
Attitude Problem	2.86	0.44	2.67	0.45	2.52	0.47	3.379**
Informational Mismatch	2.61	0.43	2.53	0.44	2.36	0.4	2.164
Complaint to Labor Market	3.15	0.38	3.11	0.4	2.83	0.5	4.397**

*p<.10, ** p<.05, ** *p<.01

22, 23, 24), Factor 2 (6, 7, 8, 12, 17, 19, 21) and Factor 3 (2, 3, 5, 10, 11, 14, 16, 25).[3]

The Mean, SD, and -value of "Attitude Problem," "Informational Mismatch," and "Complaint to Labor Market" are shown in Table 3.

The ANOVA revealed that Gender didn't have any significant effect on any Factor Scores (Table 4).

The ANOVA revealed that Age had a significant effect on "Attitude Problem" ($F_{2, 77}$ =3.379, p<0.05) and "Complaint to Labor Market" ($F_{2, 77}$ =4.397, p<0.05) (Table 5).

For "Attitude Problem," Multiple Comparisons using the Tukey method (p<0.05) showed a significant difference between "20's" and "40+." Because there were no significant difference between "20's" and "30's," and "30's" and "40+," and the mean of "30's" was between "20's" and "40+," we can conclude that Difficult Level of "Attitude Problem" decreases as age rises.

For "Complaint to Labor Market," Multiple Comparisons using the Tukey method

[3] The numbers in the parenthesis are the Difficult Situation number (Table 1).

Table 6. Comparison of Mean of Difficult Level by Experience

	< 6 months (n=27)		between 6 months and 5 years (n=24)		≧5 years (n=29)
	M	SD	M	SD	M
Attitude Problem	2.79	0.48	2.7	0.46	2.56
Informational Mismatch	2.71	0.44	2.4	0.43	2.39
Complaint to Labor Market	3.2	0.39	2.94	0.5	2.95

*p<.10, ** p<.05, ** *p<.01

Table 7. Partial Correlation Analysis

	Age	Experience
Attitude Problem	-0.283**/-0.202*	-0.207*/-0.043
Informational Mismatch	-0.224**/-0.047	-0.307***/-0.219*
Complaint to Labor Market	-0.289***/-0.186	-0.238**/-0.079

*p<.10, ** p<.05, ** *p<.01

Note: Coefficient Correlations / Coefficient Partial Correlations (Control of Age or Experience)

(p<0.05) showed a significant difference between “20s” and “40+,” and “30s” and “40+.” There was no significant difference between “20s” and “30s.” These results show that Difficult Level of “Complaint to Labor Market” doesn’t change during “20s” and “30s,” but decreases at “40+.”

The ANOVA revealed that Experience had a significant effect on “Informational Mismatch” ($F_{2,77}$=5.229, p<0.01) and “Complaint to Labor Market” ($F_{2,77}$=3.280, p<0.05) (Table 6).

For “Informational Mismatch,” Multiple Comparisons using the Tukey method (p<0.05) showed a significant difference between “<6 months” and “between 6 months and 5 years,” and “<6 months” and “>=5 years.” There was no significant difference between “between 6 months and 5 years” and “>=5 years.” These results show that Difficult Level of “Informational Mismatch” decreases as Experience becomes longer than 6 months.

For “Complaint to Labor Market,” Multiple comparisons using the Tukey method (p<0.05) did not show any significant difference among any combinations.

Because the coefficient correlation between Age and Experience at 0.617 (p<.01) showed a strong correlation, the influence of both variables on Difficult Level must be examined in terms of their mutual relationship. Therefore, at first the coefficient correlation between both Age and Experience and Difficult Level of “Attitude Problem,” “Informational Mismatch” and “Complaint to Labor Market” were calculated, and then, between both these variables, the partial correlation that controlled the effects of Age or Experience were calculated. The result is shown in Table 7.

In terms of the coefficient correlation, there exists an inverse correlation between Age/Experience and Difficult Level. That is, as Age or Experience increases, Difficult Level decreases.

The partial correlation coefficient between "Attitude Problem" and Age was rather weak. The partial correlation coefficient between "Informational Mismatch" and Experience was rather weak. There were no partial correlation coefficient between "Constraint to Labor Market" and Age or Experience.

The partial correlation analysis and ANOVA suggest 3 points.

(1) The change in "Attitude Problem" by Age wasn't so much influenced by Experience.
(2) The change in "Informational Mismatch" by Experience wasn't so much influenced by Age.
(3) "Constraint to Labor Market" was influenced by the combined effect of Age and Experience.

VII. Discussion

In this research, at first the type and the structure of Difficult Situations were clarified, secondly the relationship between Frequency and Difficult Level was clarified, and thirdly considered the influence of the counselors' attributes such as gender, age, and vocational counseling experience on Difficult Level.

As the counselors got older and became more experienced, Difficult Levels tended to decrease. On the other hand, there was no difference due to gender on Difficult Level. The Counselors seemed to be able to cope with difficult situations as they learn vocational counseling techniques owing to the accumulation of age and experience.

For the characteristic of individual factor, no tendencies were found between Frequency and Difficult Level on "Attitude Problem." As the counselors became older, Difficult Level tended to decrease.

"Informational Mismatch" occurred routinely, but there was no correlation with Difficult Level. Difficult Level decreased as the counselors became more experienced, particularly over 6 months.

"Constraint to Labor Market" occurred routinely, and Difficult Level was high. Also, Difficult Level was thought to be influenced by the combined effect of the counselor's age and experience.

Based on the above statements, we can come up with the following three training program developments.

Primarily, it is difficult for the counselors to observe and learn from their bosses' and colleagues' vocational counseling, because vocational counseling is usually performed in a one-to-one environment. Consequently, it would appear that vocational counseling techniques could be taught effectively by having counselors with various age and experience

groups talk to each other about how to cope with Difficult Situations.

Secondly, though the counselors face various difficult situations, they may be unaware of the common characteristic and coping strategy. They can accumulate vocational counseling experiences and acquire vocational counseling techniques effectively by becoming conscious of the factors like “Attitude Problem,” “Informational Mismatch” and “Complaint to Labor Market.”

Thirdly, we should develop training programs on the basis of the characteristic of each factor. “Attitude Problem” may mean there is a problem in the job seeker’s way of thinking or attitude for finding employment. In such situations, the counselors can help job seekers to become conscious of his/her own problems. Therefore it may be effective to learn active listening techniques to raise the job seeker’s awareness.

In coping with “Informational Mismatch,” it is essential to acquire the basic knowledge about how to understand job posting and job application. Because Difficult Level decreases after 6 month’s Experience, it is effective to develop a program for the counselors who handle vocational counseling for the first time where they can study basic knowledge about job posting and job application.

In “Complaint to Labor Market,” the counselors must cope with emotions like job seeker’s dissatisfaction. The emotion of dissatisfaction may go back to the unacceptance of Labor Market’s strictness and the loss of prospect for the future. If it is so, job seekers need to accept reality and adjust the direction of their own career to reality. Concretely speaking, job seekers must reconfirm their own vocational ability and, in addition, find out their own strengths which are effective for finding jobs positively. Therefore, it is effective for the counselors to learn how to talk about the job seekers’ past experience and elicit their strengths, how to write the resumes, etc.

JILPT Research Activities

International Workshop

The Japan Institute for Labour Policy and Training (JILPT) held the Twelfth Comparative Labor Law Seminar on March 3rd and 4th, 2014 in Tokyo. This Comparative Labor Law Seminar has been held biannually for the purpose of providing researchers in this area with the opportunity to discuss and learn across borders. In the seminar, we engaged in cross-national discussions and analyses on the theme of Protection of Employees' Personal Information and Privacy. We invited ten scholars from Australia, China, France, Germany, Korea, Spain, Taiwan, the UK, the US and Japan to present their national papers on the theme. The submitted papers will be published and are scheduled to be posted on the JILPT website (http://jil.go.jp/english/index.html) in due course. The list of speakers and submitted papers is as follows.

Anthony Forsyth (Australia), *A Thin Wall of Privacy Protection, with Gaps and Cracks: Regulation of Employees' Personal Information and Workplace Privacy in Australia*

Kungang Li (China), *The Personal Information and Privacy Protection of Employees in China*

Benjamin Dabosville (France), *Protection of Employee's Personal Information and Privacy in France*

Gregor Thüsing (Germany), *Data Protection in the Employment Relationship—The German View—*

Sung-wook Lee (Korea), *Protection of Employees' Personal Information and Privacy in Korea*

Diego Álvarez Alonso (Spain), *Protection of Employees' Privacy and Personal Information in Spain*

Shih-Hao Liu (Taiwan), *Protection of Employees' Personal Information and Privacy in Taiwan*

Gillian Morris (U.K.), *Protection of Employees' Personal Information and Privacy in English Law*

Benjamin Sachs (U. S. A.), *Privacy as Sphere Autonomy*

Ryoko Sakuraba (Japan), *Protection of Personal Information and Privacy at Workplaces in Japan*

Research Reports

The findings of research activities undertaken by JILPT are compiled into Research Reports in Japanese. Below is a list of the reports published since March 2014. The complete Japanese text of these reports can be accessed via the JILPT website (http://www.jil.go.jp/institute/pamphlet/). English summaries of selected reports are also available on the JILPT website (http://www.jil.go.jp/english/reports/jilpt_01.html).

Research Reports

No. 168 Current Status and Challenges in the Supply and Demand Structure of Nursing Care Human Resources: Toward a Stable Supply of Nursing Care Workers (May 2014)

No. 167 Regional Comprehensive Care in the Netherlands: Reinforcing Care Provision Frameworks and Securing Care Providers (May 2014)

No. 166 Employment Portfolio Formation Mechanisms: Empirical Research through Qualitative Analysis (May 2014)

No. 165 Labor-Management Relations in Sweden: Focus on Analysis of Labor Agreements—Research Project on Directions for Collective Labor Relations in Connection with the Establishment of Norms (Sweden) (May 2014)

No. 164 Research on Employment and Lifestyles of Non-Regular Workers in Their Prime of Life: Focus on Analysis of Current Status (May 2014)

No. 162 The Great East Japan Earthquake and Occupational Training Sites: Records of Post-Disaster Recovery and Reconstruction at Miyagi Polytechnic Center (JILPT, Compilation of the Results of the Project to Record the Great East Japan Earthquake No.7) (March 2014)

Research Series

No. 122 How Companies Are Addressing Revisions to the Labor Contract Act: Results of the Survey on Status of Utilization of Older Regular Employees and Fixed-Term Contract Employees Following Legal Revision (May 2014)

No. 121 How Companies Addressed Enactment of the Revised Act concerning Stabilization of Employment of Older Persons: Results of Survey on Status of Utilization of Older Regular Employees and Fixed-Term Contract Employees Following Legal Revision (May 2014)

No. 120 Survey on Securing and Developing Skilled Workers toward Realization of a Society in Which All Demographics Can Participate (May 2014)

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No. 118 Verification of the Effectiveness of Job Creation Fund Programs (May 2014)

No. 117 Survey on the Utilization Status of Employment Support Measures for Younger Workers (Questionnaire for Companies Recruiting through Employment Offices) (March 2014)

No. 116 Approaches to Career Guidance and Job Placement Support for University, Junior College, Colleges of Technology and Vocational Schools: Results of Surveys of Job Placement Offices and Career Centers (March 2014)

No. 115 Follow-Up Survey of Child-Raising Households (First Survey: 2013): Comparison with 2011 and 2012 Surveys (May 2014)

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No. 132 Career Guidance Policies and Their Implementation in Europe (2): Career Development in the Workplace—Review of Career Guidance for Workers (March 2014)

No. 131 Career Guidance Policies and Their Implementation in Europe (1): From Formulation to Implementation—Comprehensive Systemic Changes toward Lifelong Guidance in Europe (March 2014)

No. 130 Occupational Correlation Tables: Occupational Similarities Seen in Data from 20,000 Individuals (March 2014)

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