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A Retrospect and Prospect on the Postwar Japanese Economy

INTRODUCTION

The purposes of this brief essay are to outline for nonspecialists interested in the Japanese economy the reasons for its rapid growth during the past thirty years and to speculate on the course the Japanese economy will take during the coming few decades. It is hoped that the first task will be accomplished with a degree of detachment, given the perspective to be gained by examining a period of thirty years and that the second will be useful because an effort will be made to report an emerging consensus of scholarly opinion. In attempting to achieve both these goals, the works of colleagues in Japan and in this country were freely enlisted. But even with their assistance, the audacity of accepting an impossible assignment—writing a retrospect and a prospect of the postwar Japanese economy in a brief essay—exacts its just dues. The most that can be accomplished is to sketch the barest outline of the past and to hint at a possible course in the near future from a relatively narrow perspective. Readers interested in a further examination of any specific aspect of the observations and evaluations made in this essay must look to the appended bibliography.

NOTE: Footnotes have been kept to a minimum, as the bibliography provides sources for readers wishing to follow up on any specific point. Readily available government sources contain most of the data used in this essay. I will be happy to respond to any query concerning data used in this essay. Readers interested in an overview and exceptionally competent analyses of various aspects of the postwar economic growth of Japan are referred to Hugh T. Patrick and Henry Rosovsky, eds., *Asia's New Giant—How the Japanese Economy Works* (Washington, D.C.: Brookings Institution, 1976).

A RETROSPECT

A retrospect on the postwar Japanese economy must begin with an examination of its most notable characteristic, one to which I have already referred—the rapid and sustained growth. Though many of the figures are well known, a few are worth repeating here. The real growth rate was 7.5 percent for the 1950–1955 period, 9.1 percent for the 1955–1960 period, 9.8 percent for the 1960–1965 period, 12.1 percent for the 1965–1970 period, and 8.6 percent for the 1970–1973 period. A handy figure to remember is that the growth that started after the Korean War averaged over 10 percent for two decades. Before 1973–1974, when Japan suffered from the “oil shock,” the average growth rate of even the five recession years was 3.9 percent, which is better than the average growth rate of the United States for the entire postwar period. The superrapid growth is also evident in terms of Japan’s own economic history which distinguishes itself for sustained growth. “In 1946 GNP per capita in constant prices was back to the level of the early 1920’s. In less than ten years, the prewar peak of 1939 was regained. After 1955 each year was filled with economic growth comparable to two years’ growth by the prewar standard” [48, p.76]. With population growing at an average annual rate of only 1.03 percent during the 1953–1969 period, per capita GNP rose at a rate of just about 9 percent.

How and why was such superrapid growth attained? In attempting to suggest some general answers to this large question, let us avail ourselves of the calculations made by Rosovsky and Ohkawa [44] on the relative contributions made by several factors of growth. The results of calculations do not tell us why the rapid growth continued, but they can tell us “the sources of growth,” that is, which factor contributed how much to postwar growth, thus aiding us in asking the right questions.

1. Technological Change

The most significant point to be noticed in Table 1 is that the adjusted residual was the largest source of growth in the nonagricultural sectors during the 1955–1961 period, in which the superrapid annual growth rate of 13.04 percent was achieved and that the size of the residual remained important—accounting for nearly one-third of the continuing rapid growth—into the early years of the 1960s. Thus, the first question we must ask is, Why was technological change, which undoubtedly accounted for the most of the adjusted residual, so rapid in postwar Japan? The answer consists of four parts:

- a. War devastation, which made possible adoption of new technology on a large scale;

TABLE 1 Japan: Sources of Growth in the Nonagricultural Sector
(annual averages)

	1955-1961	1962-1964
1. Growth rate of output	13.04%	12.71%
2. Contribution of growth rate of gross capital stock	2.82	4.24
3. Contribution of growth rate of labor	3.46	2.86
4. Total contribution of inputs (line 2 + line 3)	6.28	7.10
5. Ratio of contribution of inputs to growth rate of output (line 4/line 1)	48.20	55.90
6. Growth rate of residual (line 1 less line 4)	6.75	5.61
7. Residual after adjusting for quality and utilization rate of inputs	4.56	5.10
8. Relative contribution to growth rate of:		
Adjusted capital	34.7	38.9
Adjusted labor	30.2	28.6
"Residual"	35.1	32.5

SOURCE: [44, pp. 47 and 68].

b. Availability of a large backlog of Western technology at relatively low cost;

c. Active and numerous government policies that promoted and encouraged the adoption of new technology;

d. Rapid diffusion of new technology, which was encouraged by the rapidity of the growth itself and by the ability to make improvements on imported technology.

War Devastation Japan lost more than a quarter of her industrial capacity to bombardments, and what she had left in 1945 was an overdepreciated capital stock that was technologically backward. In fact, ever since the Japanese invasion of Manchuria, in 1931, Japan's technological change had slowed visibly. Then came World War II, and as Milton Friedman is supposed to have said, "The best way to grow rapidly is to have the country bombarded." As the recovery began and postwar growth was initiated, Japan was in a position to adopt new technology without waiting for assets to be fully depreciated. The rapidity of the adoption of new technology perhaps is best seen, along with the magnitude of capital

investment (which will be discussed shortly) in the average age of capital stock in Japan, 11.66 years in 1953 and 11.05 in 1960. Comparable figures for the United States are 15.6 for 1950 and 14.7 in 1960 [44, p.62].

New Technology The abundant supply of new technology at a relatively low cost was available to satisfy the voracious appetite of Japanese industry. Counting only those contracts for which the life extended over a year and for which royalty was paid in foreign currency, 454 contracts to import new technology were signed during the 1950–1954 period, and the figure rose steadily to 575 for 1955–1959, to 2,039 for 1960–1964, and to 3,926 for 1965–1969 [148, p. 41]. The royalty payments rose at an annual average rate of 30 percent during the 1950–1961 period, only to taper off to an annual growth rate of 10 percent after 1961. On this rapid technological induction during the 1950–1962 phase, Allen [7, p. 109] notes:

Between 1950 and 1962, 1,998 contracts for technical cooperation had been signed with foreign firms, nearly two-thirds of them American. Most of the contracts related to projects in industries that have grown especially fast, notably iron and steel, petrochemicals, chemical engineering, electronics, and motor manufacturing. The result was that by the early 1960s the technical gap had been virtually closed in most branches of industry and Japanese firms were themselves beginning to devise important innovation.

The number of contracts signed, however, is only a partial indicator of the Japanese efforts to innovate. "In 1963, about 210,000 abstracts of foreign scientific papers were made by the Japan Information Center for Science and Technology. Japanese businessmen and government officials are constantly visiting foreign countries to pick up new ideas" [33, p. 61]. And 1963, it should be noted, was no different from any other postwar year.

Favorable Government Policy The process of rapid technological change was vigorously aided by the government, which adopted a wide variety of policies to assist, directly and indirectly, in the adoption of new technologies by industries. Though detailed discussion of each policy is not feasible here, the following were some of the policies adopted:

a. Beginning in 1948 and throughout the 1950s, the government made low-cost capital (loans at below-market rates) available to electric, iron and steel, coal, shipping, and other industries in order to aid the rapid "rationalization" of their technology. Because such government loans approached 30 percent of the total capital acquired for the expansion of capacity and rationalization during the several years before and after the Korean War, the effects of these direct loans were significant during the recovery and the early phase of postwar economic growth. And the policy

of supplying low-cost capital to selected industries continued, if at a diminished level, throughout the 1960s.

b. Throughout the postwar period, the basic monetary policy was to maintain "cheap money," except during brief and occasional interludes of "tight money" necessitated by international payment deficit crises. "The long-term objective of monetary policy was to supply growing industries with low-cost funds created by the Bank of Japan" [126, p. 276]. In functional terms, the policy manifested itself in the forms of (i) "overborrowing" by corporate business, i.e., for the 1950-1970 period, only one-third of aggregate investment was financed internally (by retained earnings and depreciation allowance), while the remaining two-thirds were financed externally (by loans and trade credits); (ii) "overloans" by banks, i.e., a "permanent state of over-borrowing by the commercial banks from the Bank of Japan called forth by the banks' credit extension to corporate business" [126, p. 248]; and (iii) rigid and administered interest rates.

c. The basic strategy of fiscal policy has been "easy money with a surplus budget" to the extent possible. Revenues were purposely underestimated, and budgetary needs were met by taking a declining share of the GNP through taxes because of the rapidly expanding tax base. "In aggregate, the public sector has financed most of its investment internally, from tax and nontax current revenues and from government enterprise depreciation allowances. This was a consequence of the policy decision to give first priority to private demand, especially business investment, in a period when it was very strong" [200, p. 354].

d. Tax policy aided rapid technological change in two ways. One was through generous depreciation provisions, asset revaluation, and numerous tax deductions for corporate business. The effective tax rate on corporate income fluctuated within a range of 19 to 22 percent (compared to a range of 27 to 31 percent in the United States). Most of the provisions were so phrased that the larger and more rapidly growing firms were able to enjoy a lower effective tax rate than smaller and slower-growing firms. The other was (and is) through a *de facto* decline in the progressivity of personal income taxation through such means as total or partial exemption of interest and dividend incomes from taxation. The effective tax rates for those making an income five times as large as the average family was around 23 percent, and for those making an income ten times as large, about 35 percent (compared to 43 and 57 percent for comparable income brackets in the United States). The taxation policy, in effect, kept clear of measures likely to curb industrial investment and damage personal incentives.

e. The risks involved in the expansion of capacity through the adoption of newer (and invariably "lumpier") technology were substantially reduced and the competition which could threaten the profit level was minimized

through the "administrative guidance" of the Ministry of International Trade and Industry (MITI) and a major amendment of the Anti-Monopoly Act in 1953. Both the MITI guidance and the amendment permitted, de facto and de jure, various types of collusive activity. Lax enforcement of the Anti-Monopoly Act and permission liberally granted to the largest firms seeking to merge further facilitated the rapid adoption of new technology.

f. The government also took the initiative in disseminating information relating to new technology, in promoting government-financed research, and in making investments in endeavors complementary to the adoption of new, larger-scale technology (such as the establishment of industrial zones and related social overhead facilities).

Diffusion of Technological Change The last important factor contributing to the rapidity of technological change is the obvious fact that the rate of technological adoption and diffusion tends to be rapid in a rapidly growing economy. Also important, though quantitative evidence is difficult to obtain, is that imported technologies have often been significantly improved by the Japanese themselves. According to a survey made in 1962, about 9,500 large firms reported that they spent as much as one-third of their research and development expenditures on "modifying and perfecting the imported technique" and, on average, about four times more is spent on imported technology than on indigenous technology in order to improve "production engineering and laying out of the capital facilities." Through such efforts, it is often said, imported technologies have been made as much as 20 percent more "efficient" than the same technology used in the nations where it was invented. (Systematic and quantitative research on this point is yet lacking, but both Japanese and Western executives readily acknowledge the general validity of such an assertion.)

2. Capital Accumulation

Table 1 reveals that another question we should ask is, Why was capital accumulation so rapid? The increase in capital adjusted for quality change accounted for about 35 to 40 percent of the growth of output, and productivity-raising technological change could of course not have been possible had it not been for the rapidly increasing supply of capital. The annual average ratio of gross fixed investment, excluding inventories, to GNP for the 1953-1965 period was 28.3 percent. The comparable figure for the United States for the same period was 17.9; for the United Kingdom, 15.7; for West Germany, 23.3; and for France, 18.9. The ratio of gross domestic fixed investment to gross domestic product for Japan was well over 30 percent and often exceeded 35 percent during the twenty years following the Korean War [44, pp. 279 and 293].

Motivation for the rapid investment is obvious. One way to express that motivation is to say that the economy was driven to achieve a high rate of investment by the need to restock the war-torn economy, by the desire to close the technological gap in order to increase productivity and to increase international competitive ability, and by the profitability of increasingly capital-intensive heavy-chemical industries. Another way of stating the motivation is to say that the marginal productivity of capital was extremely high and the returns from investments remained high and even rose, aided by the correspondingly larger derived demand, or "in Japan, investment was the driving force for growth" [44, p. 147].

In discussing the relationship between rapid capital formation and the superrapid growth, we should note in particular that Japanese investment was concentrated more in output-increasing ventures undertaken by rapidly growing manufacturing industries, rather than cost-reducing ones, as were those in the United States. Compared to other countries, a significantly smaller fraction of capital in Japan was allocated to such investments as housing and other social overhead capital. This is why Ichimura observed that the Japanese economy devoted "an unusually high proportion of gross national product to productive fixed-capital formation" and allocated it "intensively in export industries or capital good[s] industries" so as to achieve "a high rate of economic growth" [198, p. 272].

What enabled the sustained and large investments, without causing more than a modest and tolerable inflation (despite the consistent easy money policy) and without making the nation depend on foreign borrowing to any significant degree, was the high rate of saving achieved by the Japanese. The ratio of personal saving to disposable income during the 1959–1970 period averaged as high as 18.3 percent in contrast to 12 percent in Germany and 7 to 8 percent both in the United States and the United Kingdom. Why do the Japanese save so much? The question has interested many economists and, as a consequence, many answers have been offered. Though no one can claim—especially after some intense debates—to have found a definitive answer, the following factors, in varying combinations and with varying emphasis, have been presented as explanations for the high rate of saving in postwar Japan [61] [30]:

a. Savings tend to be large because real income has been rising rapidly while Japanese consumption patterns (taste) have lagged behind.

b. The semiannual lump-sum bonus payments, which are customary in Japan, tend to be viewed as transitory income by their recipients.

c. Because of the *nenkō joretsu* system (a wage level geared more to seniority than to merit or productivity) and changes in the age composition of employees (the proportion of older employees was rising before the early 1960s), there was a tendency for savings to increase.

- d. The Japanese have had a desire to accumulate wealth because their ratio of financial assets to income is still low (about half that of the United States in 1970).
- e. Target savings for housing, education, and high-cost consumer durables, especially because personal financing institutions are not yet developed in Japan, have raised total savings.
- f. Since social welfare programs have been relatively neglected, personal savings are needed for old age and unforeseen expenditures.
- g. The increasing labor participation rate, i.e., the increase in the number of income-earners within families, has also contributed to increasing savings.
- h. The tax system encourages savings: the exemption or generous deduction of interest income from the tax base is permitted.
- i. Finally, many see a culturally ingrained tradition of thrift.

Analytically speaking, some of these factors overlap, and evidence questioning the significance of some suggested factors has been advanced. The positions taken on this important "savings question" range from Rosovsky and Ohkawa's, which holds that "savings are considered an essentially independent process whose key determinants are the rate of growth and the level of income" [44, p. 172] to the more wide-based institutionally oriented explanations offered by Komiya, Kanamori, Mizoguchi, and other Japanese scholars.¹

3. Contribution by Labor

Next to technology and capital, labor—adjusted for "quality" improvements—has contributed most to postwar Japanese growth (see Table 1), accounting for nearly 30 percent of it. The reasons include the following:

- a. The ample supply of labor (contributing factors included the nearly 6 million returnees from the former Japanese empire plus demobilized soldiers, the postwar baby boom, migration from the agricultural sector, the increasing labor force participation rate, etc.) prevented wages from rising rapidly. During the 1950s, wages rose less than labor productivity and, for most of the 1960s, productivity kept pace with wage increases. This sharply contrasts with the experience of the past twenty years in both Europe and the United States, where wages have risen more than productivity.
- b. The proportion of young men and women in the labor force rose during the 1960s, and this had the effect of preventing increases in wages because of the *nenkō joretsu* system. The presence of the young, whose

wages under this system tended to be lower than their productivity, and of women, who were usually outside the system, helped industry obtain more labor at a lower cost.

c. Labor moved from low-productivity to high-productivity sectors. For example, between 1950 and 1965, the number of agricultural workers declined by 4.6 million and the share of labor in forestry, agriculture, and fishing fell from 42 to 26 percent [33, p. 52]. Small firms employing between 1 and 9 persons accounted for a quarter of the total labor force in 1950 but for only 16 percent by 1963, and the percentage is still steadily declining.

d. Enterprise unionism, as several quantitative studies show,² did not exert a wage-boosting effect. As union membership failed to rise above 30 percent of the labor force and as the major unions formed within the largest firms, in effect sharing in the oligopolistic profits of those firms, the economywide impact of enterprise unionism was minimized.

e. The quality of labor, if recent research findings are correct, rose steadily through education, on-the-job training, and various improved management techniques. Among the beneficial effects of the improving quality of labor is considered to have been its role in "increasing the country's capability to absorb new methods from abroad" [44, p. 55].

f. Finally, the culturally ingrained traditions of loyalty, intergroup competitiveness (interfirm or even between sections within a firm), and the willingness to work "long and hard" should not be ignored. Economists shun the subject because of its relative intractability. However, Japan is the only industrialized nation in which the Ministry of Labor has had to admonish employees who are reluctant to take all the vacation due them and where many salaried employees ("salarymen") work well in excess of forty hours per week without extra compensation as a matter of course.

4. The Role of International Trade

While the preceding descriptions of technology, capital, and labor may be helpful in depicting the importance of those chief factors, crucial questions remain: Why did Japanese exports, which are often considered an important factor in Japan's postwar growth, increase so rapidly? And to what extent did international trade contribute to postwar growth? These questions are important in their implications for the world economy (and especially for Japanese-Asian and Japanese-United States economic and political relations), in helping us better to understand the nature of Japan's postwar growth, and in enabling us to anticipate the future course of the Japanese economy.

As might be expected from the preceding discussion, the answer to the first question is noncontroversial. The growth of Japanese exports in the

1953–1965 period has been phenomenal: the annual compounded percentage growth rate in dollar values was 17.1, compared to 11.7 for Germany, 13.9 for Italy, 5.2 for the United Kingdom, and 4.7 for the United States. It was due, according to Kanamori, who speaks for most students of Japanese economy, to "the Japanese participation in the growth of the world trade, the maintenance of the terms of trade, and the reduction of unit labor costs through increased productivity. . . . The comparatively low price of Japanese exports was an important reason behind its export growth" [199, p. 309]. Kanamori's main point is supported by U.N. statistics which show that the Japanese index of export prices (1953 = 100) stood at 86.1 in 1965 compared to 110.0 for Germany, 118.5 for the United Kingdom, and 112.8 for the United States.

Japan's price competitiveness was a product of increased efficiency of production as well as of Japan's ability to shift the mix of exports (i.e., productive capacity) to maintain price competitiveness. "During the 1950–55 period, the main contributors [to rapid growth of exports] were textiles and sundry goods; during the 1955–60 period, machinery and textiles; and [during] the 1960–65 period, machinery and metals. . . . Without this change in composition, Japanese exports probably would not have achieved the spectacular growth of 17 percent per year" [199, p. 312]. This, of course, is an oversimplification. The quotation only hints at the gradual but steady process of change which is taking place in the product mix of the industrial sector in favor of heavy and chemical industries and which is required if Japan is to stay ahead of its competitors in the international market [201].

In discussing the postwar success of Japanese exports, our observation must include the important role played by the government in promoting and actively aiding exports. Even if we grant the price competitiveness of Japanese goods as the main reason for the rapid rate of growth of exports and we recognize the difficulties involved in quantifying the export-promoting contribution made by various policies, we cannot ignore the fact that a substantial fillip was given to exporting industries both directly and indirectly by laws permitting generous tax deductions for overseas sales expenditures, preferential (low-cost and de facto government-guaranteed) loans, and numerous forms of cartel and other collusive activities among export-related industries. The government's foot-dragging in the liberalization of imports and capital inflow, the policies allowing cartels in domestic markets, and numerous other measures should also be kept in mind in examining the success of postwar Japanese exports.

In answering the second question—How much did the success in the international market contribute to Japan's postwar growth?—nearly all students of the Japanese economy believe, with Rosovsky-Ohkawa and Kanamori, that "Japan's rate of growth of exports has been high and well above world averages because the rate of growth of its economy and

especially of its industry has been high and well above world averages and not vice versa" [44, p. 173]. They also believe that increases in exports "were made possible by domestic factors such as increased domestic investment and an enlarged home market" [199, p. 319], that is, the export growth came about as a result of the growth of the economy, and what it implies in terms of competitive ability is difficult to challenge. There are, however, a few who suggest a closer look at the exporting industries with a view to moderating, but not denying, the majority view. For example, Blumenthal has counseled a modification of the majority view, based on his findings that the inputs purchased by the exporting industries per unit of export have been declining since the early 1960s and that the export-oriented industries have had a higher rate of technological change [60].

5. Other Important Factors Promoting Rapid Growth

Many other factors besides technology, capital, labor, and international trade contributed significantly to the superrapid growth of the postwar Japanese economy. Though a few of these factors have been referred to, or at least discussed implicitly already, I shall briefly describe the more important ones for the sake of those readers interested in a more broad-based examination of the growth of the postwar Japanese economy than what could be attempted through the medium of the sources-of-growth framework or other basically econometric approaches.

a. In addition to those growth-promoting policies which have already been discussed in relation to taxation, investment, international trade, and the areas of monetary and fiscal policies, two other kinds of government activity are worth noting. The first involves implementation of a broad range of policies affecting the industrial organization of postwar Japan, that is, policies that in effect have actively promoted oligopolistic market structures in the name of strengthened international competitive ability, technological change, and "stability of the market order." Legal and "administrative" cartels have been tolerated, and "underground" collusive activities of various types (exceeding 1,500 throughout the 1960s) have gone unprosecuted. Mergers among the five largest firms in an industry (such as in iron and steel and butter) have been approved even when that meant that the dominance of the merged firm would result in a reduced level of competitiveness in the market [50].

The second involves adoption of what might be termed a "domestic demand maintenance policy," i.e., one which keeps the total tax revenue low (at around 20 percent of GNP) relative to other industrial nations (United States, 27 percent; United Kingdom, 35 percent; and Denmark, 44 percent). Through special legislation favoring the corporate sectors,

increased basic exemptions for personal income taxes, and periodic reductions in tax rates, total government revenue has been designed to rise only slowly, that is, because the rapidly growing economy provided a larger and larger tax base, the government was able to obtain more revenue without increasing tax rates and even with reduced rates. After all, the nominal GNP rose at an annual average rate of better than 15 percent, and since Japan relies heavily on income taxes, the elasticity of the central government's revenue is well above unity. One of the effects of this policy clearly was to maintain the level of demand for consumer goods as well as to encourage corporate investment.

b. In discussing postwar growth, one must not fail to take note of the importance of the Korean War boom, which injected much needed dollars into the economy during the period of the "dollar shortage" and which in effect primed the pump of postwar Japanese growth. The total amount of the "special war demand" of the U.N. forces met by the Japanese industries was substantial (e.g., \$592 million in 1951 and in excess of \$800 million for 1952 and 1953). The effect of the war demand on textiles, cement, some iron and steel products, as well as others was, therefore, significant in that profits made by the boom provided a part of much needed capital and the optimism required for the industry rationalization plans initiated by MITI during the mid-1950s.

c. The declining trend of world market prices of some of the important raw materials and foodstuffs after the Korean War aided postwar growth because it not only reduced input costs but also helped to alleviate the potentially strangling effect of a much larger international trade deficit. The index of prices of imports (1965 = 100) fell, as a trend, from 117.0 in 1953 to 97.7 in 1962.

d. Though its effect should not be overrated, the allocation of no more than 1 percent of GNP for national defense (thanks to the American nuclear umbrella) is considered by some to have been a significant contributing factor to Japan's superrapid growth. Had Japan been required to invest a larger proportion of its GNP for nonproductive defense purposes, her growth, given the high marginal productivity of capital in postwar Japan, would have been reduced. This is especially the case when we realize that Japan's armament industry would not have been able to supply most of the sophisticated equipment needed by the Self-Defense Force. It would have been necessary to buy those military goods, most likely from the United States, with the inevitable consequence of weakening Japan's trade balance.

e. A much debated characteristic of the Japanese economy, the so-called dualistic structure, i.e., the coexistence of large, technologically advanced firms and small and medium-sized technologically lagging firms,

contributed on balance (between growth-promoting pluses and growth-inhibiting minuses) to the growth of the economy in three ways. First, the clearly privileged large firms were able to benefit from lower costs of capital. Economies of scale were fully realized because of the size of the firms' market share. They were able to hire the best the labor market had to offer, and enjoyed a host of other advantages besides. Second, the largest firms had the ability to cushion fluctuations in economic conditions by using the smaller, often subcontracting, firms as a buffer, while maintaining own returns to investment, morale of own labor, etc. Third, there existed a market for older productive capacities which the largest firms were anxious to discard in order to get on to the next technological frontier.³

f. Mostly by their own initiative, the larger firms in postwar Japan made a conscious and determined effort to improve their managerial efficiency. "The American model"—such as the divisional structure and staff sections attached to decision-making higher echelons—was actively imported beginning in the mid-1950s, and by the late 1950s the largest firms had adopted the system of "profit centers" within their firms to improve the cost-accounting procedures within each division or branch. Much of the "American model," however, was in effect grafted onto the Japanese decision-making system, i.e., the *ringi* system (group decision-making by consensus) and the *jūyaku-kai* (an executive committee that passes on group decisions made at lower levels). The results of these grafts in most circumstances were that the efficiency of managerial personnel was improved, and firms were able to react to the swiftly changing economic environment more rapidly than they had been able to prior to their Americanization [54] [55].

g. Finally, special mention must be made of the role played by the ten general trading companies in postwar growth. These giant traders, accounting for approximately half of both exports and imports, functioned as efficient finders of markets for products and raw materials because of their ability to gather economic intelligence through their network of branch offices and one-man posts situated around the globe. In most instances, these firms helped to minimize the risks involved in international trade for the producers (especially small and medium-sized ones) and to channel credits which they obtained from the major banks to those producers who might have had difficulty obtaining necessary capital on their own. Evidence of collusion among these giant trading firms to fix commission charges and otherwise exploit their oligopolistic market structure is limited. It seems reasonable to say that this unique Japanese institution played a positive and significant role in promoting Japan's international trade.

RECENT DEVELOPMENTS AND PROBLEMS

Economic growth continued even more rapidly during the 1965–1970 period (12.1 percent) than in the preceding five years (9.8 percent). Most of the factors that contributed to the rapid growth of the postwar years were still at work, but the most significant reason for the accelerating growth of the 1965–1970 period was the increasing importance of such industries as plastics, power-generating machinery, chemical fibers and fabrics, office machinery, automobiles, tape recorders, optical equipment, television, etc., which steadily grew on the back of earlier investments and technological change and which continued to do so on the strength of further investments and increasingly larger expenditures on each firm's R&D. These were the industries that played a major role in doubling Japan's labor productivity between 1960 and 1967 and in raising it another 50 percent between 1967 and 1970.

Exports continued to increase, led by the products of those industries. The rising world income level contributed to the steady increase in Japan's exports. Also contributing were the Kennedy rounds, which reduced the tariffs on the principal Japanese exports by approximately 35 percent, and the Vietnam War, which stimulated the demand for Japanese goods by the Southeast Asian nations, Taiwan, and Korea. The prime mover behind Japan's continued success in the international market during this period was again, as it has been since the mid-1950s, cost competitiveness of Japanese industries aided by the inflation which began to plague Japan's competitors. Japanese policymakers were sanguine about Japan's economic future, as profit rates remained high and real wages continued steadily to climb. Per capita income in Japan exceeded \$2,000 in 1970.

The rapid growth of the latter half of the 1960s, however, was being achieved by sweeping several increasingly uncomfortable economic realities under a rug of optimism. While the rapid growth continued, the bulges under the rug were growing in size. One of the biggest bulges was an increasingly serious labor shortage. This problem, which appeared during the early 1960s, continued to grow worse during the latter half of the decade because of the buoyant economic conditions and the delayed effect of the rapidly declining fertility rate following the brief postwar baby boom. The wage differentials between the newly employed (fresh graduates of middle and high schools and of universities) and the most senior employees narrowed because of the rising wage level of the former. For new employees the wage differential between large and small firms narrowed, and by the mid-1960s, smaller firms, able to offer less promising future wages for seniority, often had to pay even higher wages than the large firms to obtain new employees. Bankruptcies among small firms increased, with rising labor costs the prime reason. Most important of all,

the comfortable margin enjoyed during the 1950s between rates of increase in labor productivity and the real wage disappeared, and by the mid-1960s wage increases threatened to overtake the increases in productivity. The postwar unions, long accustomed to winning a large increase in wages by occasionally resorting to prolonged strikes, were growing increasingly militant; and the new age, according to Japanese labor economists, of aggressive *shuntō* unionism (industrywide rather than company-based unions) was about to begin.

The MITI officials continued to poor-mouth Japan's position in the world economy in their efforts to ignore another increasingly large and internationally visible bulge, i.e., a fundamental change in Japan's position in the international economy during the second half of the 1960s; by 1969, few doubted that the consistent and large trade surplus which had begun to accumulate beginning in the mid-1960s was there to stay. Even a government agency predicted a steadily increasing surplus throughout the 1970s. The trade surplus in 1970 stood at \$8 billion, an enormous sum for a nation which had so long suffered chronic deficits and a hand-to-mouth existence.

Despite gentle and not so gentle (the textile episode with the United States) foreign urging and an increasingly visible inflationary pressure resulting from the trade surplus, the government, which had worked for so long and so hard to promote exports before seeing a trade surplus, clung to export-promoting policies, to the exchange rate of 360 yen to the dollar set in 1949, and to import duties on consumer goods which exceeded 35 percent. As late as October 1969, the government continued to retain quota restrictions on 161 items (four-digit Brussels Tariff Nomenclature). In the summer of 1970, a group of academic economists strongly urged the adoption of a policy of allowing the yen to appreciate by about 10 percent in small, discreet steps, i.e., the crawling peg. The recommendation generated a spirited discussion in academic, business, and financial communities but no action by the government. The continued growth of exports as reflected in the large trade surplus as well as the possibility of continued and ever larger surpluses created or threatened to create serious difficulties with several nations that were beginning to accumulate uncomfortably large trade deficits with Japan.

By the mid-1960s, and some would argue by the beginning of the 1960s, the unwelcome consequences of the government's policies favoring industrial concentration constituted yet another unsightly bulge under the rug. By 1970, at least 10 percent of the shares in 7,612 firms were owned by the 100 largest firms (the same 100 owned at least 50 percent of the shares in 2,818 of those firms). The degree of ownership control exerted by the largest 100 firms had more than doubled since 1960. Mergers increased steadily during the 1960s, especially during the latter half of the

decade, and an increasing proportion of those mergers were carried out among the largest firms and were conglomerate in nature. Cartels of various types which were legal under eleven laws continued to increase during the 1960s, and "underground cartels," too, increased, suffering little or no prosecution.

Increasing concentration ratios, concentration of ownership control, and legal and illegal cartels could not but affect the pricing and other behavior of firms. Evidence steadily piled up showing that the frequency and amplitude of price changes were highly correlated with the market structure and the presence or absence of cartels. Export prices of many commodities were significantly lower than those charged to domestic consumers. (In December 1966, the Japanese FTC took a rare action when it brought charges of illegal price fixing against six television manufacturers who charged domestic consumers 190,000 yen for a 19-inch television while exporting the identical product at 65,000 yen.) One need hardly be an economist of the Marxist persuasion to compile a long list of such indictments.

The biggest bulge of them all, however, was a series of questions relating to the social costs of rapid economic growth. By the mid-1960s the public, led by the press and academics, was voicing three demands. The first was that a variety of social welfare programs be increased from the low level of 6.2 percent of GNP as late as 1966 to the level of the industrialized Western nations (13.8 percent in the United Kingdom, 19.9 percent in West Germany, and 15.0 percent in Italy), and corresponding more to the size of the GNP then attained. The second was that efforts be made to check the pollution of air, water, and the environment in general, and this demand grew even more vocal as water and air pollution were confirmed to have been the causes of illnesses and deaths in several affected regions. The third was that such growth-promoting (or assumed to be growth-promoting) measures as legal cartels, retail price maintenance laws, unchecked mergers between the largest firms, etc., which contribute to gradually more unequal distribution of asset income, be curtailed.

These demands were made by housewives who began to mobilize nationwide women's organizations; by opposition parties, on economic and ideological grounds; and by the mass media, which constantly featured academics critical of government policies. The Sato cabinet enacted various antipollution measures and increased social welfare budgets in response to these demands. However, these measures fell considerably short of those demanded and failed to quell the increasingly articulate voices of the dissatisfied. In both local and national elections, the incumbent Liberal-Democratic Party (LDP) continued to lose ground during the 1960s.

While rapid growth continued and the economy remained buoyant, the

policymakers chose to ride on the momentum, hoping for the best. Despite the rapidly accumulating trade surplus, MITI showed no sign of changing the policies "to strengthen the international competitive ability of Japanese firms"; and, after all, there was as yet no political party sufficiently strong to wrest power from the conservatives (the LDP).

Both the Japanese government and industry, which ignored the academics and chose to ride on the momentum of growth, were, however, rudely jolted by the Nixon *shokku* (shock) of August 15, 1971. As part of his "new economic policy," the U.S. President suspended the convertibility of the dollar into gold, imposed a surcharge of 10 percent on imports on a temporary basis, and made it known that the dollar would be devalued. Indicating the strength of its desire to maintain the 360:1 exchange rate, the Bank of Japan reacted to the new American policy by buying as much as \$4.5 billion during the several days following the *shokku* to maintain the yen-dollar rate. And even when the yen was forced to float shortly thereafter, the bank continued to intervene to prevent the sharp upward revaluation of the yen, and the policy of the "dirty float" was continued into December. The end of indecision on the part of the Japanese policymakers came at the Smithsonian Institution on December 18, when the Japanese were forced to revalue the yen by 16.88 percent, although the "last offer" the Japanese Finance Minister was instructed to make was 14 percent.

Despite dire predictions of what would follow such a drastic revaluation and despite a brief panic at the Tokyo Stock Exchange, the trade surplus continued to rise. Though much of the cost competitiveness was lost by the revaluation, Japan was still able to increase its exports (surprising some econometric forecasters) because of aggressive sales efforts, established distribution channels, and willingness to trim profits. Thus, by the end of 1972, many began to speak of revaluation of the yen, and the Bank of Japan, wishing to prevent another revaluation, continued to buy dollars in order to maintain the new rate of 308 yen to the dollar. Because of the dollar purchases and the accumulating trade surplus, the Japanese dollar reserve by the beginning of 1973 exceeded \$19 billion, an embarrassingly huge figure.

The U.S. trade position continued to deteriorate despite the devaluation, and the dollar was devalued again in mid-February 1973. Japan agreed at this time, under strong pressure from the United States and also wishing not to increase its already huge dollar reserves, to float the yen at its market level. The outcome was a rate of 265 yen to the dollar, or a de facto 24.7 percent appreciation of the yen vis-à-vis the rate of only two years previously. The effect of the new "clean float" (or relatively cleaner) went beyond that of the 308:1 rate. A number of small and medium-scale firms which largely depended on export markets were forced to reduce output or

even to go into bankruptcy. The trading companies forecast a gloomy future even for the major exporters.

The year 1973, however, had yet another *shokku* in store for the Japanese economy—the oil *shokku*. The effects of that shock, added to those of the appreciation of the yen and the new government policy to promote imports (which was adopted during the spring), are not yet all in. The final accounting of 1973 is now being made, and the official statistics of the first two quarters of 1974 are still being revised. But a few facts are evident. Japanese imports in 1973 rose by a whopping 71 percent compared to a 29 percent increase in exports. The major cause of the increase in imports was the sudden surge in imports of consumer goods encouraged by the new exchange rate and new government policies, such as the reduction of quotas and tariffs (of 164 quota-restricted items in October 1968, only 74 remained so restricted by October 1974). A rapid inflation was another major fact of 1973. The consumer price index (1970 = 100) rose from 114.5 to 135.1 during the year, and the wholesale price index, too, showed a large increase of 36.5 points. Delayed revaluation of the yen, which contributed to excess liquidity within the economy (at the end of 1973, dollar reserves still stood at over \$13 billion), and high oil prices were two major factors in the inflation and rising labor costs, though by no means the only ones.

While some forecast a real growth rate of as much as 4.8 percent for 1974, the statistical evidence on hand is as yet difficult to evaluate. Both the CPI and WPI are still rising rapidly, as is the wage level. The dollar reserves are being reduced at the rate of \$1 billion per month, and the yen rate is fluctuating at about 300 to the dollar. A tight money policy has been continued, but signs of an increase in exports began to appear after the midyear.

[POSTSCRIPT: Even the low (by Japanese standards) growth rate of 4.8 percent was not achieved in 1974. According to a preliminary official report, the economy experienced its first postwar negative growth, approximately 3 percent. What surprised the forecasters was the continued and increasingly large reduction in industrial output seen during the second half of the year. Output for June 1974 was only 1.9 percent below that of June 1973, but by December output was more than 15 percent below that of the year before. At the same time, because of the tight monetary policy adopted and the recession, the rate of increase in prices has moderated significantly. The WPI is now (early months of 1975) rising only at an annual rate of slightly above 10 percent, and the CPI is rising at about 15 percent. International trade fared relatively well and has registered a consistent surplus during the past several months. The reserve now exceeds \$14 billion.

In short, Japan in the spring of 1975 continues to be in the grip of

stagflation. The likelihood of the new Miki cabinet realizing its goals for the year—a real growth rate of 4.3 percent and inflation of less than 10 percent—appears slim. While various forecasts are being made of the magnitude of new orders to be placed following the completion of inventory adjustments and the hoped for recovery of the U.S. economy, the “spring offensive” continues to succeed in winning wage settlements exceeding levels “advised” by the government. Though the current stagflation defies confident forecasting (the Japanese situation is no more tractable than that of the United States), one thing is certain: if the economy fails to recover soon, the less than rosy prospect envisioned for the future of the Japanese economy in the following pages needs to be touched up with a few more strokes of pessimism.

A PROSPECT

Perhaps based on the wisdom that no economy can continue to grow at the superrapid rate which the Japanese economy has maintained, a widely held expectation is that the growth rate of the economy will decelerate during the coming decades. Most econometric models and business and government experts forecast an average growth rate of 6.5 to 7.5 percent during the 1970–1990 period, with the 1990 rate at about 4 percent. This projected decline in the growth rate of from about 10–11 percent to 4 percent is based on estimated trends (extrapolations adjusted for known factors or expected shifts in parameter values), and for most economists, it appears “reasonable.” That is to say, a new model which is significantly different from those used up to now will require assumptions or estimates which would command less agreement than those made or used in the current models.

No attempt can be made here to evaluate each or even some of the models used in making the projections. I suggest, however, that the consensus is perhaps optimistic for two major reasons. One is that the projections were made before the full impact of the oil crisis was felt, and the other is that assumptions and simple trend adjustments often made in the models tend to fail to incorporate some economic changes that cannot be readily accommodated by econometric modeling and social and political factors that may have a profound impact on the basic economic variables used in the models.

Rosovsky and Ohkawa, writing in 1972 before the oil crisis, noted that “by the end of this decade, it is likely that Japan’s rate of growth of aggregate output will have fallen from its postwar rate of 10 percent to somewhere in the neighborhood of 6.5 percent” [44, p. 248]. While it is

quite possible that their longer term projection for the 1970–1990 period could come true, the important fact to be noted is that, through no fault of theirs—inasmuch as the oil crisis erupted after that passage was written—even usually optimistic business groups expect the economy to grow at a rate well below 5 percent in 1974 and about 7 percent in 1975. Thus, the growth rate has much catching up to do during the latter half of the 1970s to reach the Rosovsky-Ohkawa prediction. It should also be noted that mean real growth for 1970–1973 came to only 8.6 percent.

Of course, it is patently unfair to ask any model to perform as well after introducing an exogenous *shokku*. The only point being made here is that the projections must be scaled down somewhat. According to the Economic Planning Agency, 58 percent of the increase in the WPI during the second half of 1973 was contributed by increases in import prices; the comparable figure was 44 in the first half of 1974. Though the effect of import price rises on the WPI is estimated to decline during the second half of 1974, it is uncertain how rapidly it will decline thereafter. Since the same EPA study found that 42 to 51 percent of the increases in the CPI during 1973 and the first half of 1974 were due to increases in the WPI, the impact of the increases in import prices, led by an increase of more than four times in the oil price, on the current inflation in Japan must be fully recognized in the context of the rapidly changing Japanese economy.

Though it is not possible in this essay to trace the significance of the increases in import prices on numerous other aspects of the economy, it should be pointed out that Japan imports 99.7 percent of the crude oil she consumes and that Japanese imports account for 15.9 percent of total oil imports of crude oil by the OECD (Organization for Economic Cooperation and Development) countries. The same figures for iron ore are 99.3 percent and 42.3 percent; for manganese ore, 91.9 and 32.3; and for copper ore, 94.2 and 77.1. Japan imports 100 percent of the lead ore, bauxite, wool, and cotton she requires; imports of these goods into OECD countries account for from 12.3 to 35.5 percent of those countries' needs.

The actions of the OPEC (Organization of Petroleum Exporting Countries) cartel may not indicate the pattern of the future, but it is nevertheless essential to attempt to analyze, to the extent possible, the effect of the possibly sharp increases in prices (and even embargoes by exporting nations) of natural resources in projecting the future of the Japanese economy. Given the nature of the problem involved, that task will be exceedingly difficult, but it should be faced squarely, because without a realistic appreciation of the fragility of the Japanese economy—the virtual absence of vital raw materials—it is impossible to project the course of the economy with any degree of success. In addition, it is impossible to understand the seemingly excessive concern of Japanese policymakers in promoting the international competitive ability of Japanese industry and

Japan's deliberate slowness in reducing trade barriers and the large trade surplus despite considerable international pressure.

There are several other factors which could reduce the growth rate of the Japanese economy more rapidly than is indicated by many projections. The factors which are either ignored or inadequately dealt with in these models include the following:

Changing Nature of Labor Motivation and Unionism

Though I in no way wish to deny the general theoretical validity of the propositions that labor moves from low- to high-productivity sectors, and that higher wages in most instances increase the supply of labor, there is increasing evidence—sample surveys and a scattering of research results—indicating that the expected reallocation of labor may not provide the additional labor needed to assure industrial output increases at an average rate of 10–11 percent per year, the rate needed if the average growth rate of the economy of 6.5–7.5 percent is to be maintained.

More persons have been choosing to remain in stressfree and less polluted smaller and medium-sized cities and even in rural sectors during the past few years, despite the lure of the higher wages and other enticements offered by major industrial centers. As the phenomena of U turns and J turns (mobility patterns of going to work in a major city and then returning to the point of origin or going elsewhere) have increased, these terms have become well-accepted among Japanese labor economists. In the 1975 crop of college graduates, nearly three times the number of those of the year before competed in the civil service examinations for employment with local governments, which traditionally offer lower wages and prestige than the central government. A series of questionnaire results obtained by a major newspaper reveal that the younger labor force is decreasingly concerned with the traditional meaning of "success" but instead is placing more emphasis on personal freedom, on cleaner air, and on jobs that are gratifying to them rather than wage maximizing. And even older workers are indicating that they are unwilling to exert more effort to add to their ability to buy additional consumer durables if the effort requires fighting "traffic hell," breathing polluted air, and living in congested quarters, that is, there is considerable evidence indicating that labor is decreasingly motivated by economic factors alone. An even lower fertility rate could also contribute to a reduction in the growth rate of industry and of the economy to a level below that now projected. The possibility is even greater when we consider the changing attitude of labor toward work and life which, perhaps by the next decade, could reduce the rate of productivity increases from the projected 6–7 percent per year, even with the assumed rate of technological change.

The decline in the growth rate and inflation accompanied by labor shortages and a reduced rate of increase in labor productivity will inevitably worsen the current tension between labor unions and management. As already noted, the initial signs of increasing combativeness of labor unions have already surfaced. Thus, it is quite reasonable to assume that industrywide American-type unionism will increase and that labor disputes in the near future will be increasingly bitter and prolonged. Once this trend begins, it is likely that the strong ideological orientation (absent in the United States) of the Japanese unions could seriously aggravate labor problems. Perhaps economic theory has considerably more predictive power on labor mobility in Japan during the coming decades than I am prepared to accept, but it is also possible that the projection is quite wide of the mark.

Negative Effects of Foreign Political Reactions and International Financial Instability

In all the models, projections of the future growth rate of Japanese exports have been made on the basis of economic factors alone. Productivity increases (terms of trade) and investments along with the projected growth rate of world trade (income) are the major determinants of export growth. Even leaving aside the oil question, which we have already touched upon, one cannot but be pessimistic in evaluating the long-run likelihood of Japan's best customers and the world markets absorbing the growing industrial output of Japan at a rate sufficient to assure a mean growth rate of 6.5 to 7.5 percent per year for the next two decades.

The favorable conditions that made it possible for the Japanese rate of technological change to far exceed that of her major competitors have all but disappeared; Japan's industrial competitors will be increasingly able to inhibit the continued incursion of Japanese goods into their home markets. For political as well as economic reasons, Japan's customers in less developed regions are, with few exceptions, highly concerned about the prolonged trade deficit with Japan and with increasing Japanese investments.

Occasional expressions of anti-Japanese sentiment in the United States press (usually well orchestrated by the Administration), European concern approaching undisguised fear toward Japanese exports, and the riots of Thai students against Japanese imports are all manifestations of rapidly changing circumstances in the world economy which a growing Japan must face.

Japanese policymakers and industry, which have made significant efforts to realize "orderly marketing," to reduce exports of selected goods to several nations, and to create the eight-point import promotion measures of

1972 and the revaluation, also continue to maintain export promotion policies in the form of numerous export cartels and low-cost loans and other subsidies to export-oriented industries. The basic policy still is to aid exports by making only the necessary concessions and a show of cooperation. It would be naive to think that Japan can achieve economic growth during the coming decades without a substantial political and economic conflict with her competitors and customers. It is also naive to assume that the projected course of growth will not be negatively affected by the obvious difference between the world of the econometric model, in which everything can be decided by three or four variables, and the real world, in which a host of economic and political realities determines the outcome of trade balances. The current projections are also based upon the world economy's ability to intelligently solve the major international financial crisis generated by the rapid shift in world monetary resources. If not, Japan's ability to withstand the high oil price will be even less than it is today, and unlike the United States, Japan's ability to minimize the crisis through "Project Independence" is nil.

Growth-inhibiting Effects of Increased Social Welfare

If the budgets of the last few years are indicative of the changes to come, the government will of political necessity be forced to allocate more and more national resources to welfare measures, antipollution programs, and other "nonproductive" projects. And given the most recent election results, nonproductive expenditures will rise much more sharply than has been anticipated. This change, desirable as it is socially, cannot but increase the difficulty of attaining the projected growth rate. The LDP will be forced to decide during the coming years between economic growth and political stability (i.e., the ability of the LDP to remain in power). Unlike the early 1960s when the demand for welfare programs and antipollution measures was still muffled by rapidly increasing real income and the consumption boom for the three C's (i.e., car, color TV, and room cooler), the situation in 1974 is significantly different, and one can safely assume that public demands will become more intense during the years to come. Such changes in the public attitude will have a much more profound effect on the Japanese economy than in the United States where the two major political parties essentially share the same basic political ideology.

There are a few other related factors that are expected to slow the growth of the Japanese economy. One is the expected gradual decline in the rate of technological change. Though it is possible for the rate of change to accelerate, for reasons which we cannot now anticipate, such a possibility is small. In fact, even the possibility of the slowly (and monotonically)

declining rate of technological change usually assumed in econometric projections being borne out in the future is at best 50-50 or perhaps less because of a possible more rapid decline in the rate of technological change. Another factor is the more rapid decline in savings because of inflation (and evidence to this effect is appearing), slower increases in real income, and the changing attitudes of the public (especially the young) toward the future. If social welfare programs are increased, this too could cause savings to decline.

The above discussion of possible growth-inhibiting factors is in no way exhaustive, but these factors alone suggest that the future growth rate of the Japanese economy will be slower than that currently projected by many. Data for the years 1973 and 1974 alone are sufficient to show that growth is now running seriously behind the projections. The statistical loss in the growth rate does not necessarily represent a loss to most Japanese. Our point here is simply that the Japanese economy will almost certainly grow more slowly in the future than the rate currently projected.

It is worth bearing in mind that if anyone had attempted to speculate on the course of the Japanese economy any time between 1860 and 1950 for more than a few decades into the future, his chance of making a respectable forecast would have been virtually nil. With the Meiji Restoration, the beginning of the rapid industrialization during the 1880s, the First World War boom and its aftermath, the recession-ridden 1920s and the Great Depression, the Second World War and the postwar growth, forecasting the future of the Japanese economy has not been easy, to say the least, and the task is no easier in 1975. There is, however, a Japanese quality which could surface again to aid the optimists, that is, the Japanese have managed to make the most of the little they have and have shown themselves to thrive on adversity. Unity of the spirit, or the spirit of "Japan, Inc." in the good sense of the phrase, could surface again to surprise us all. I am quite willing to be surprised.

NOTES

1. In addition to the authors referred to in [61] and [30], see [125].
2. See Masao Baba's article in [30].
3. There are numerous works on the dual structure. The more useful among them are [10] [39] [98] [133] [161].

BIBLIOGRAPHY

Books:

1. Abegglen, James C., ed. *Business Strategies for Japan*. Chicago: Encyclopedia Britannica, 1970. Also Tokyo: Sophia University.

2. Abegglen, James C. *The Japanese Factory: Aspects of Its Social Organization*. New York: Free Press, 1958.
3. Adams, Thomas Francis Morton. *A Financial History of Modern Japan*. Tokyo: Kodansha, 1964.
4. Adams, T. F. M., and N. Kobayashi. *The World of Japanese Business*. Tokyo: Kodansha, 1969.
5. Adams, T. F. M., and H. Iwao. *A Financial History of the New Japan*. Tokyo: Kodansha, 1972.
6. Allen, George C. *Japan's Economic Expansion*. New York: Oxford University Press, 1965.
7. ———. *Japan's Economic Recovery*. London: Oxford University Press, 1958.
8. ———. *Japan as a Market and Source of Supply*. Elmsford, N.Y.: Pergamon Press, 1967.
9. Bisson, T. A. *Zaibatsu Dissolution in Japan*. Berkeley: University of California Press, 1954.
10. Broadbridge, Seymour A. *Industrial Dualism in Japan*. Chicago: Chicago University Press, 1966.
11. Cohen, Jerome B. *Economic Problems of Free Japan*. Princeton, N.J.: Princeton University Press, 1952.
12. ———. *Japan's Postwar Economy*. Bloomington: Indiana University Press, 1958.
13. Cohen, Jerome B., ed. *Pacific Partnership: United States-Japan Trade*. Lexington, Mass.: Heath, 1972.
14. Cook, Alice H. *Japanese Trade Unionism*. Ithaca: Cornell University Press, 1966.
15. Dore, Ronald P. *Land Reform in Japan*. New York: Oxford University Press, 1959.
16. Emi, Koichi. *Government Fiscal Activity and Economic Growth in Japan, 1868-1960*. Tokyo: Kinokuniya, 1963.
17. Hadley, Eleanor M. *Antitrust in Japan*. Princeton, N.J.: Princeton University Press, 1970.
18. Haymai, Yujiro, and Vernon W. Ruttan. *Agricultural Development: An International Perspective*. Baltimore: John Hopkins University Press, 1971.
19. Hirschmeier, J. *The Origins of Entrepreneurship in Meiji Japan*. Cambridge, Mass.: Harvard University Press, 1964.
20. Hirschmeier, J., and T. Yui. *History of Japanese Business*. Cambridge, Mass.: Harvard University Press, 1974.
21. Hollerman, Leon. *Japan's Dependence on the World Economy*. Princeton, N.J.: Princeton University Press, 1967.
22. Hunsberger, Warren S. *Japan and the United States in World Trade*. Mystic, Conn.: Verry, 1964.
23. Ichimura, Shinichi. "Dynamic Properties of the Osaka Econometric Model of the Postwar Japanese Economy, 1952-1961." Mimeographed. No. 43. Institute of Social and Economic Research, Osaka University, 1967.
24. Ichimura, Shinichi, and S. Miyano. "The Structure and Growth of the Japanese Economy." Mimeographed. No. 27. Institute of Social and Economic Research, Osaka University, 1960.
25. Ichimura, Shinichi. *A Dynamic Input-Output Model of Japanese Economy*. No. 34. Institute of Social and Economic Research, Osaka University, 1963.
26. Japan. Ministry of International Trade and Industry. *Foreign-Affiliated Enterprises in Japan*. Trade Bulletin Corporation, 1969.
27. Kanamori, Hisao. *Exports of Manufactures and Industrial Development of Japan*. New York: United Nations, 1964.
28. Klein, L., and K. Ohkawa, eds. *Japanese Economic Growth Since the Meiji Era*. Homewood, Ill.: Irwin, 1968.

29. Kojima, Kiyoshi. *Japan and a Pacific Free Trade Area*. Berkeley: University of California Press, 1957.
30. Komiva, Ryutaro, ed. *Postwar Economic Growth in Japan*. Berkeley: University of California Press, 1966.
31. Levine, S. B. *Industrial Relations in Postwar Japan*. Urbana: University of Illinois Press, 1958.
32. Lockwood, William W., ed. *The State and Economic Enterprise in Japan*. Princeton, N.J.: Princeton University Press, 1965.
33. Maddison, Angus. *Economic Growth in Japan and the USSR*. London: Allen & Unwin, 1971.
34. Minami, Ryoshin. *The Turning Point in Economic Development: Japan's Experience*. Economic Research Series 14. Tokyo: Hitotsubashi University Institute of Research, 1973.
35. Monroe, Wibur F. *Japan: Financial Markets and the World Economy*. New York: Praeger, 1973.
36. Nakayama, Chiaki, and G. C. Allen. *The Price of Prosperity: Lessons from Japan*. Tokyo: Institute of Economic Affairs, 1966.
37. Ogura, T., ed. *Agricultural Development in Modern Japan*. Tokyo: Fuji, 1966.
38. Ohkawa, K., B. F. Johnson, and H. Kaneda, eds. *Agriculture and Economic Growth: Japan's Experience*. Princeton, N.J.: Princeton University Press, 1970. Also Tokyo: Tokyo University Press.
39. Ohkawa, K., et al. *The Growth Rate of the Japanese Economy Since 1878*. Tokyo: Kinokuniya, 1957.
40. Otsuka, Kazuhiko. *Balanced Industrial Structure and Transfer of Technology: A Study of Technology Transfer in Small-Scale Industries*. Tokyo: Ministry of International Trade and Industry, 1972.
41. Patrick, Hugh T., ed. *Japanese Industrialization and Its Social Consequences*. Berkeley: University of California Press, forthcoming.
42. Patrick, Hugh T. *Monetary Policy and Central Banking in Contemporary Japan*. Bombay: University of Bombay Press, 1962.
43. Rosovsky, H., ed. *Discord in the Pacific—Challenges to the Japanese-American Alliance*. Washington, D.C.: Columbia Books, 1972.
44. Rosovsky, H., and K. Ohkawa. *Japanese Economic Growth: Trend Acceleration in the Twentieth Century*. Stanford, Calif.: Stanford University Press, 1973.
45. Sakurai, Kin'ichiro. *Financial Aspects of Economic Development of Japan 1868-1958*. Tokyo: Japan Science Council, 1964.
46. Shiomi, Saburo. *Japan's Finance and Taxation, 1940-1956*. New York: Columbia University Press, 1957.
47. Shinohara, Miyoei. *Growth and Cycles in the Japanese Economy*. Tokyo: Kinokuniya, 1962.
48. Taira, Koji. *Economic Development and the Labor Market in Japan*. New York: Columbia University Press, 1970.
49. Taylor, Allen, ed. *Perspectives on United States-Japan Economic Relations*. Cambridge, Mass.: Ballinger, 1973.
50. Yamamura, Kozo. *Economic Policy in Postwar Japan: Growth Versus Economic Democracy*. Berkeley: University of California Press, 1967.
51. Yamanaka, Tokutarō. *Small Business in Japan*. Tokyo: Japan Times, 1960.
52. Yanaga, Chitoshi. *Big Business in Japanese Politics*. Yale Studies in Political Science, No. 22. New Haven: Yale University Press, 1968.
53. Yao, Jiro. *Monetary Factors in Japanese Economic Growth*. Kobe Economic and Business Research Series 3. Kobe: Kobe University Press, 1970.

54. Yoshino, M. Y. *The Japanese Marketing System: Adaptations and Innovations*. Cambridge, Mass.: M.I.T. Press, 1971.
55. ———. *Japan's Managerial System: Tradition and Innovation*. Cambridge, Mass.: M.I.T. Press, 1968.

Articles:

56. Ahrensdoerf, J. "Japanese Bank Loans for Private Fixed Investment." *IMF Staff Papers*, March 1965.
57. Aliber, R. Z. "Japanese Growth and the Equilibrium Foreign Exchange Value of the Yen." *Southern Economic Journal*, January 1973.
58. Biefa, K. "Economic Planning in Japan." *Economic Record*, June 1969.
59. Blumenthal, T. "The Effect of Socioeconomic Factors in Wage Differentials in Japanese Manufacturing Industries." *Economic Studies Quarterly*, September 1967.
60. ———. "Exports and Economic Growth: The Case of Postwar Japan." *Quarterly Journal of Economics*, November 1972.
61. ———. "A Note on the Life-Cycle Pattern of Saving in Japan." *Hitsubashi Journal of Economics*, February 1969.
62. Broadbridge, S. "Banking, Big Business and Economic Growth." *Banker*, October 1972.
63. Bronfenbrenner, M. "Japanese-American Economic War: Some Further Reflections." *Quarterly Review of Economics and Business*, August 1973.
64. ———. "Economic Thought and Its Application and Methodology in the East: The State of Japanese Economics." *American Economic Review, Papers and Proceedings*, May 1956.
65. ———. "Lessons of Japanese Economic Development." *Pacific Affairs*, Spring 1961.
66. ———. "Formalizing the Shimomura Growth Model." *Economic Development and Cultural Change*, October 1965.
67. ———. "The American Occupation of Japan: Economic Retrospect." In G. K. Goodman, ed., *The American Occupation of Japan*. Kansas: University of Kansas Press, 1968.
68. Bronfenbrenner, M., and K. Kogiku. "The Aftermath of the Shoup Tax Reforms." parts I and II. *National Tax Journal*, September and December 1957.
69. Bronfenbrenner, M., and J. A. Buttuck. "Population Control in Japan: An Economic Theory and Its Application." *Law and Contemporary Problems*, Summer 1960.
70. Bronfenbrenner, M., et al. "Japan's Economic Development: A Discussion." *American Economic Association, Papers and Proceedings*, May 1963.
71. Chenery, H. B., S. Shishido, and T. Wanatabe. "The Pattern of Japanese Growth, 1914-1954." *Econometrica*, January 1962.
72. Cole, R. E. "Functional Alternatives and Economic Development: An Empirical Example of Permanent Employment in Japan." *American Sociological Review*, August 1973.
73. ———. "Permanent Employment in Japan: Facts and Fantasies." *Industrial and Labor Relations Review*, October 1972.
74. Cook, A. H. "The International Labor Organization and Japanese Politics." *Industrial and Labor Relations Review*, October 1965.
75. Davidson, S., and Y. Yasuba. "Asset Revaluation and Income Taxation in Japan." *National Tax Journal*, March 1960.
76. Dore, Ronald P. "Japanese Land Reform in Retrospect." *Far Eastern Survey*, December 1958.
77. Drysdale, P. "Japan, Australia, New Zealand: The Prospect for Western Pacific Economic Integration." *Economic Record*, September 1969.

78. Ehrlich, E. E. "Note on Postwar Credit Policies in Japan." *Review of Economics and Statistics*, November 1957.
79. Emi, Koichi. "The Structure and Its [sic] Movements of the Tertiary Industry in Japan." *Hitotsubashi Journal of Economics*, June 1971.
80. Evans, R., Jr. "Japan's Labor Economy: Prospect for the Future." *Monthly Labor Review*, October 1967.
81. ———. "Shuntō: Japanese Labor's Spring Wage Offensive." *Monthly Labor Review*, October 1967.
82. Forrest, Matthew D., and K. Yoshihara. "Japan's Dependence on Exports in Contrast with That of Six Other Nations." *Hitotsubashi Journal of Economics*, June 1971.
83. Fujii, H. "Economic Planning in Post War Japan: A Case Study in Policy Making." *Asian Survey*, April 1972.
84. Gleason, Alan H. "The Social Adequacy Method of International Level of Living Comparisons as Applied to Japan and the United States." *Journal of Economic Behavior*, April 1961.
85. Glicksman, M. "R & D in Japan . . . A Future That Will Challenge the US." *Research Management*, January 1971.
86. Gregory, G. "Japan Enters the Technetronic Age." *Economic Record*, March 1973.
87. Hashimoto, Masanori. "Economics of Postwar Fertility in Japan: Differentials and Trends." *Journal of Political Economy*, March/April 1972.
88. Hayami, Y. "Innovations in the Fertilizer Industry and Agricultural Development: The Japanese Experience." *Journal of Farm Economics*, November 1967.
89. ———. "Agricultural Productivity Differences Among Countries." *American Economic Review*, December 1970.
90. Hayami, Y., and V. W. Ruttan. "Factor Prices and Technological Change in Agricultural Development: The U.S. and Japan, 1880-1960." *Journal of Political Economy*, September/October 1970.
91. Hayashi, Y. "Capital Accumulation and Taxation in Japan." *National Tax Journal*, June 1963.
92. Hollerman, L. "Interpretation and Use of Japanese Foreign Trade Statistics." *Economic Development and Cultural Change*, October 1959.
93. ———. "Japan's Foreign Trade Dependence and the Five-Year Economic Plan." *Review of Economics and Statistics*, November 1958.
94. ———. "Japan's Place in the Scale of Economic Development." *Economic Development and Cultural Change*, January 1965.
95. ———. "Liberalization and Japanese Trade in the 1970s." *Asian Survey*, May 1970.
96. Horiba, Y. "Factor Proportions and the Structure of Inter-Regional Trade: The Case of Japan." *Southern Economic Journal*, January 1973.
97. Hunsberger, Warren. "Japanese Exports and the American Market." *Far Eastern Survey*, September 1957.
98. Itoh, Taikichi. *Structural Analysis of the Problem of Medium and Small Enterprises in Contemporary Japan*. Management and Labor Series, English Series, no. 21. Tokyo: Institute of Management and Labor Studies, Keio University, 1972.
99. Johnston, Bruce F. "Agricultural Productivity and Economic Development in Japan." *Journal of Political Economy*, December 1961.
100. ———. "Agriculture and Economic Development: The Relevance of the Japanese Experience." *Food Research Institute Studies*, November 1966.
101. Kahn, H., and M. Singer. "Japan and Pacific Asia in the 1970s." *Asian Survey*, April 1971.
102. Kanamori, H. "Striking Economic Growth Reviewed in a White Paper." *Asian Affairs*, October 1960.

103. ———. "Structure of Foreign Trade." *Developing Economies*, December 1972.
104. ———. "Economic Growth and the Balance of Payments." In [30].
105. ———. "What Accounts for Japan's High Rate of Growth." *Review of Income and Wealth*, June 1972.
106. Karsh, B., and S. Levine. "Present Dilemmas of the Japanese Labor Movement." *Labor Law Journal*, July 1962.
107. Kato, T., and T. Takahasi. "Family Planning in Industry: The Japanese Experience." *International Labour Review*, Summer 1971.
108. Kato, U. "Factors Contributing to the Recent Increases in Productivity in Japanese Agriculture." *Journal of Development Studies*, October 1965.
109. Koizumi, A. "Foreign Exchange Reserves as a Buffer in Japanese Countercyclical Policy." *Annals of the Hitotsubashi Academy*, April 1959.
110. ———. "The Overloan Problem." *Hitotsubashi Journal of Commerce and Management*, November 1962.
111. Kojima, K. "Capital Accumulation and the Course of Industrialization with Special Reference to Japan." *Economic Journal*, December 1960.
112. ———. "An Impression of Oceanian Economy." *Economic Record*, March 1964.
113. ———. "Japan and a New World Economic Order." *Hitotsubashi Journal of Economics*, June 1974.
114. ———. "Japan's Trade Policy." *Economic Record*, March 1965.
115. ———. "Non-Tariff Barriers to Japan's Trade." *Hitotsubashi Journal of Economics*, June 1972.
116. ———. "A Pacific Free-Trade Area: A New Design for World Trade Expansion." *Hitotsubashi Journal of Economics*, June 1971.
117. ———. "Reorganization of North-South Trade: Japan's Foreign Economic Policy for the 1970s." *Hitotsubashi Journal of Economics*, February 1973.
118. Komiya, Ryutarō. "Economic Growth and the Balance of Payments: A Monetary Approach." *Journal of Political Economy*, January/February 1969.
119. Koo, A. Y. C. "Japan in Intra-regional Trade: Alternative Models." *Review of Economics and Statistics*, May 1955.
120. Krause, Lawrence B. "Evolution of Foreign Direct Investment: The United States and Japan." In Jerome B. Cohen, ed., *Pacific Partnership: United States-Japan Trade, Prospects and Recommendation for the Seventies*. New York: Japan Society, 1973.
121. ———. "The International Economic System and the Multinational Enterprise." *Annals*, September 1972.
122. Levine, S. B. "Japan's Growth Economy: Joy & Anguish." *Current History*, April 1971.
123. ———. "The White-Collar, Blue-Collar Alliance in Japan." *Industrial Relations*, October 1965.
124. Litvak, I. A., and C. J. Maule. "Japan's Overseas Investments." *Pacific Affairs*, Summer 1973.
125. Lucken, J. A. "Seasonal Income and Consumption in Japan and in the United States, 1961/4 to 1969/1." *Hitotsubashi Journal of Economics*, June 1974.
126. Mikitani, Ryoichi. "Monetary Policy in Japan." in K. Hoblik, ed., *Monetary Policy in Twelve Industrialized Countries*. Federal Reserve Bank of Boston, 1973.
127. Minami, Ryoshin. "Further Considerations on the Turning Point in the Japanese Economy (I)." *Hitotsubashi Journal of Economics*, February 1970.
128. ———. "Further Considerations on the Turning Point in the Japanese Economy (II)." *Hitotsubashi Journal of Economics*, June 1970.
129. ———. "Population Migration Away from Agriculture in Japan." *Economic Development and Cultural Change*, January 1967.

130. ———. "Transformation of the Labor Market in Postwar Japan." *Hitotsubashi Journal of Economics*, June 1972.
131. ———. "Turning Point in the Japanese Economy." *Quarterly Journal of Economics*, August 1968.
132. Minenura, T. "The Role of Government in Industrial Relations: An Outline." *British Journal of Industrial Relations*, July 1965.
133. Minoguchi, T. "Production and Wage Problems of Japan's Medium and Small Manufacturing Enterprises." *Asian Affairs*, June 1957.
134. Misawa, T. "Agrarian Reform, Employment and Rural Incomes in Japan." *International Labour Review*, April 1971.
135. Mitsufoji, T., and K. Hagiwara. "Recent Trends in Collective Bargaining in Japan." *International Labour Review*, December 1972.
136. Miyazawa, K. "The Dual Structure of the Japanese Economy and Its Growth Pattern." *Developing Economies*, July 1964.
137. Mizoguchi, T. "An Analysis of Consumption Patterns in Postwar Japan." *Hitotsubashi Journal of Economics*, June 1970.
138. Monroe, Wilbur D. "Japan's Economy in the '70s: Implications for the World." *Pacific Affairs*, Winter 1972-1973.
139. Namiki, M. "The Farm Population in the National Economy Before and After the Second World War." *Economic Development and Cultural Change*, October 1960.
140. ———. "Growth of Japanese Exports." *Developing Economies*, December 1970.
141. Ohkawa, K. "Significant Changes in Japanese Agriculture Since 1945." With discussion by B. F. Johnston. *Journal of Farm Economics*, December 1961.
142. ———. "Capital Formation in Japan." *Economic Development and Cultural Change*, October 1963.
143. ———. "Agriculture and the Turning Points in Economic Growth." *Developing Economies*, December 1965.
144. Ohkawa, K., and H. Rosovsky. "Recent Japanese Growth in Historical Perspective." *American Economic Association, Papers and Proceedings*, May 1963.
145. Onishi, A. "Japanese Interests in Southeast Asia, A Japanese View." *Asian Survey*, April 1971.
146. Oshima, H. T. "National Income Statistics of Underdeveloped Countries." *Journal of the American Statistical Association*, June 1957.
147. ———. "The World Economic Crisis and Japan's Foreign Economic Policy." *Developing Economies*, December 1967.
148. Ozawa, Terumoto. "Japan's Technology Now Changes the West." *Columbia Journal of World Business*, March/April 1972.
149. Patrick, Hugh T. "Dollar, Dollar, Who Has the Dollar? Relationship Between the Japanese and American Balance of Payments." *Asian Survey*, August 1966.
150. ———. "Japanese Influences on the United States Balance of Payments." *Asian Survey*, May 1963.
151. ———. "Japan's Interest Rates and the Gray Financial Market." *Pacific Affairs*, Fall/Winter 1965-1966.
152. ———. "Monetary Policy in Japan's Economic Growth, 1945-1959." *Far Eastern Survey*, May 1959.
153. ———. "The Phoenix Risen from the Ashes: Postwar Japan." In J. B. Browley, ed., *Modern East Asia: Essays in Interpretation*. New York: Harcourt Brace Jovanovich, 1970.
154. ———. "Problems in United States-Japanese Economic Relations." *Asia Research Bulletin*, March 1972.
155. Rotwein, E. "Economic Concentration and Monopoly in Japan." *Journal of Political Economy*, June 1964.

156. Sasaki, K. "Quantitative Effect of the U.S. Economy on Japan's Foreign Trade Between 1950-1956." *Review of Economics and Statistics*, August 1959.
157. Saxonhouse, Gary. "A Review of Recent United States-Japanese Economic Relations." *Asian Survey*, September 1972.
158. Shinkai, Y. "Elasticities of Substitution for Japanese Imports." *Review of Economics and Statistics*, May 1972.
159. ———. "Price Elasticities of Japanese Exports: A Cross-Section Study." *Review of Economics and Statistics*, May 1968.
160. Shinohara, M. "The Structure of Supply and the Consumption Function in Postwar Japan." *Journal of Political Economy*, December 1959.
161. ———. "Industrial Growth, Regional Structure, and Differentials in Japan." *Hitotsubashi Journal of Economics*, February 1967.
162. ———. "A Survey of the Japanese Literature on Small Industry." In B. F. Hoselitz, ed., *The Role of Small Industry in the Process of Economic Growth*. The Hague and Paris: Mouton, 1968.
163. ———. "International Comparison of the Levels of Industrial Production in 1958." *Developing Economies*, March 1965.
164. Shirai, T. "The Changing Pattern of Collective Bargaining in Japan." *British Journal of Industrial Relations*, July 1965.
165. ———. "Prices and Wages in Japan: Towards an Anti-Inflationary Policy." *International Labour Review*, March 1971.
166. Snyder, W., and T. Tanaka. "Budget Policy and Economic Stability of Postwar Japan." *International Economic Review*, February 1972.
167. Stoikov, V. "Size of Firm, Worker Earnings and Human Capital: The Case of Japan." *Industrial and Labor Relations Review*, July 1973.
168. Somers, G., and M. Tsuda. "Job Vacancies and Structural Change in Japanese Labor Markets." *The Measurement and Interpretation of Job Vacancies*. Other Conferences 5. New York: National Bureau of Economic Research, 1966.
169. Sumiya, M. "The Impact of Technological Changes on Industrial Relations in Japan." *British Journal of Industrial Relations*, July 1965.
170. Tachi, R. "Regional Disparity and Internal Migration of Population in Japan." *Economic Development and Cultural Change*, January 1964.
171. Taeuber, Irene B. "Urbanization and Population Change in the Development of Modern Japan." *Economic Development and Cultural Change*, October 1960.
172. Taira, K. "Japanese 'Enterprise Unionism' and Interfirm Wage Structure." *Industrial and Labor Relations Review*, October 1961.
173. ———. "Japan's Economic Relations with Asia." *Current History*, April 1971.
174. Taira, K. "The Labor Market in Japanese Development." *British Journal of Industrial Relations*, July 1964.
175. ———. "Participation of Workers' and Employers' Organizations in Economic Planning in Japan." *International Labour Review*. December 1966.
176. ———. "Ragpickers and Community Development: 'Ants' Villa' in Tokyo." *Industrial and Labor Relations Review*, October 1968.
177. Takahashi, F. "Money Supply and Economic Growth." *Econometrica*, March 1971.
178. Tamura, S., and L. J. Lau. "Economies of Scale, Technical Progress, and the Nonhomothetic Leontief Production Function: An Application to the Japanese Petro-Chemical Processing Industry." *Journal of Political Economy*, November 1972.
179. Tatemoto, M., T. Uchida, and T. Watanabe. "A Stabilization Model for the Postwar Japanese Economy, 1954-62." *International Economic Review*, February 1967.
180. Tatemoto, M., and S. Ichimura. "Factor Proportions and Foreign Trade: The Case of Japan." *Review of Economics and Statistics*, November 1959.

181. Trezise, P. H. "The Place of Japan in the World Network of Trade." *American Economic Association, Papers and Proceedings*, May 1963.
182. Tsubouchi, Y. "Changes in Fertility in Japan by Region, 1920-62." *Demography*, May 1970.
183. Tsuda, M. "Japanese Wage Structure and Its Significance for International Comparisons." *British Journal of Industrial Relations*, July 1965.
184. Tsuru, S. "Survey of Economic Research in Postwar Japan: Major Issues of Theory and Public Policy Arising out of Postwar Economic Problems." *American Economic Review*, January 1964.
185. ———. "Growth and Stability of the Postwar Japanese Economy." *American Economic Association, Papers and Proceedings*, May 1961.
186. Ueno, H. "A Long-Term Model of the Japanese Economy, 1920-1958." *International Economic Review*, May 1963.
187. Watanabe, S. "Subcontracting, Industrialization and Employment Creation." *International Labour Review*, July/August 1971.
188. Watanabe, T. "Economic Aspects of Dualism in the Industrial Development of Japan." *Economic Development and Cultural Change*, April 1965.
189. Yamamura, K. "Zaibatsu, Prewar, and Zaibatsu, Postwar." *Journal of Asian Studies*, August 1964.
190. ———. "Wage Structure and Economic Growth in Postwar Japan." *Industrial and Labor Relations Review*, October 1965.
191. ———. "Market Concentration and Growth in Postwar Japan." *Southern Economic Journal*, April 1966.
192. ———. "A Note on Regional Economic Development—A Factor Analysis on the Japanese Case." *Hitotsubashi Journal of Economics*, July 1967.
193. Yamazawa, I. "Industry Growth and Foreign Trade: A Study of Japan's Steel Industry." *Hitotsubashi Journal of Economics*, February 1972.
194. Yoshihara, K. "Demand Functions: An Application to the Japanese Expenditure Pattern." *Econometrica*, April 1969.
195. ———. "The Growth Rate as a Determinant of the Savings Ratio." *Hitotsubashi Journal of Economics*, February 1972.
196. Young, Alexander K. "Internationalization of the Japanese General Trading Companies." *Columbia Journal of World Business*, Spring 1974.
197. Zahn, F. "Sectoral Labor Migration and Sustained Industrialization in the Japanese Development Experience." *Review of Economics and Statistics*, August 1971.

The following are in [28]:

198. Ichimura, Shinichi. "Factors for Rapid Economic Growth: A Social Accounting Approach."
199. Kanamori, Hisao. "Economic Growth and Exports."
200. Patrick, Hugh T. "The Financing of the Public Sector in Postwar Japan."
201. Shinohara, Miyohei. "Patterns and Some Structured Changes in Japan's Postwar Industrial Growth."

DISCUSSION

Speaker: Kozo Yamamura

Discussant: Leon Hollerman, Claremont Men's College

Hollerman shared Yamamura's pessimism about the future of the Japanese

economy, especially for the long run, noting the extensive assortment of problems facing Japan. Furthermore, he suggested that the transition which her economy is currently undergoing is important and basic for the entire Pacific Basin region and therefore deserving of scholarly attention.

Yamamura's paper presented an excellent summary of the various explanations for Japan's successful economic development; yet Hollerman argued that these explanations are still subject to debate. For example, Was Japan's growth export-led? And in an historical context, What was the relative importance of saving and investment, the dual economy structure, and foreign technology?

Yamamura had cited the growth analysis of Rosovsky and Ohkawa. In their analysis of the postwar period, they found that the increase in capital and labor stocks accounted for only two-thirds of Japan's economic growth, and they attributed the large residual to improvements in technology. Hollerman, however, contended that Rosovsky and Ohkawa had erred, for the capital stock is computed on a vintage basis and implicitly accounts for technological advance.

Hollerman also questioned Rosovsky and Ohkawa's conclusion that the high volume of Japanese exports was attributable to rapid economic growth, rather than vice versa. In any event, however, Hollerman suggested that foreign trade may constrain future economic growth, since Japan's ability to grow will depend on her success in obtaining food and raw materials from the rest of the world.

As a concomitant of "resource diplomacy," Japan will try to diversify her sources of supply so as to minimize her dependence on any single trading partner, with the result that she will become much more dependent on the diversification of foreign trade and foreign investment. And since approximately two-thirds of Japanese trade is conducted with Pacific Basin countries, the importance of this region for Japan is obvious.

Hollerman was less sanguine about Japan's long-term prospects. He reasoned that since regionalism and protectionism are likely to become more accentuated, the Japanese competitive position will be less dependent on price and quality than on an ability to specialize and secure market-sharing agreements. As a result, while there will be horizontal trade with the other rich Pacific Basin countries, Japan will also develop complementary relationships with the region's LDCs, where plant and equipment are exchanged for raw materials. In either case, though, problems relating to bilateral deficits are likely to spread, and the associated political difficulties will be compounded as well.

Hollerman concluded by observing that Japan now has a greater vested interest in liberalized trade. Indeed, it is ironic that whereas Japan has been criticized for unduly regulating trade and investment flows, she has now emerged as "the champion of free trade."

Robert S. Einzig wondered if such a position could be all that beneficial

for Japanese economic growth prospects. After all, if all countries are similarly trying to expand their exports in the face of slowly expanding markets, rapid export growth for any given country would be unlikely. Yamamura concurred, and felt that despite the optimistic predictions of the majority of economists, a sustained 6 percent growth in exports is the best that could be hoped for.

Richard Kjeldsen expressed concern about the Japanese balance-of-payments figures, and argued that there are more fundamental difficulties in Japan's external balance than are revealed by the numbers. For a more thorough analysis, one would need to consider Japanese controls over the capital account as well as the autonomous nature of Arabian capital movements.

Lawrence J. Lau wondered if the recent layoffs in Japan represented a break from the traditional practice of lifetime employment, and if so, whether this might alter work incentives and lead to a switch of labor from cyclical to less cyclical industries. Yamamura felt that the layoffs were only a transient problem and that the labor shortage over the long run would persist. Moreover, those who had been fired were only the temporarily employed anyway, and thus the layoffs would have no effect on corporate loyalty. Rather, Yamamura re-emphasized his point from the paper that future economic growth will more likely be affected by the changing attitudes of the younger generation.

On the other hand, Walter Yep questioned whether even past economic growth had been all that successful. Needless to say, the rapid increase in GNP had not been without associated increases in environmental problems and social unrest. Yamamura countered by saying that the national welfare had improved since; for example, more Japanese are enjoying a larger variety of consumer durables and taking more trips. Furthermore, since the 1960s, the net national welfare index, which adjusts the GNP for the costs of correcting pollution and congestion, has risen. Hollerman was suspicious about the net national welfare figures, however, for he noted that they were closely correlated with the GNP data.

Regarding the observed increase in the Japanese GNP, Paul A. David expanded on Hollerman's critique of the Rosovsky-Ohkawa growth analysis. First of all, he stated that the deceleration in Japan's economic growth could have been predicted, for much of the initial growth was attributable to a catch-up in technology. Secondly, David suggested that part of the residual could be explained by reformulating the production function.

In particular, let:

$$(1) \quad Q = f(L, K, M),$$

where

Q = output of nonagricultural sector

L = input of labor

K = input of capital

M = inputs drawn from the rest of the world—i.e., materials "imported" from the agricultural sector and other countries.

Furthermore, if the rate of growth is denoted by an asterisk, R represents the residual term, and θ_i indicates the share of the total output or cost accounted for by the i th input, then:

$$(2) \quad Q^* = R^* + \theta_L L^* + \theta_K K^* + \theta_M M^*$$

By further assuming that $M/Q = k$ —that is, that the rate of growth of material imports is proportional to the rate of growth of output—(2) may be written as:

$$(3) \quad Q^* = R^* + \theta_L L^* + \theta_K K^* + \theta_M Q^*$$

If the U.S. figure for $\theta_M = 1/3$, then, since the Japanese economy grew at 13 percent per year during the period 1955–1961, adjusted $Q^* = 0.13 - (1/3)0.13$.

Hence, approximately 4.3 of the thirteen percentage points can be accounted for by the growth in material imports. Consequently the residual that must be accounted for is smaller—about 2.5 percent rather than the 6.75 percent which Rosovsky and Ohkawa had computed.