

A History of Japanese Industry (6): From War and Disaster to Reconstruction (1937-54)

By Tsukamoto Takeshi

Wartime economic control, 1937-45

The Sino-Japanese war, which started in July 1937, led to the implementation of economic control designed to secure war materials and boost production of weapons. The government announced in June 1938 the Wartime Economic Control Plan, calling for (1) control of supply and demand of war materials, (2) restrictions on imports and promotion of exports, (3) rationing of key materials and introduction of official prices, and (4) restrictions on consumption of 33 key items including iron-steel, nonferrous metal, petroleum, raw cotton and wool. Rationing and quotas were enforced by the end of the year, first for cotton yarn and then for gasoline. Imports of raw cotton and wool began to decline sharply in 1939. Exports of cotton yarn and textiles as well as production of cotton yarn dropped subsequently during the year. Production of foodstuffs, lumber and chemicals also began to fall in 1940. The supply shortages prompted the government to harbor the idea of occupying Southeast Asia, mostly under British, French and Dutch rule, to secure strategic materials.

When Japan sent troops to French Indochina in July 1941, the United States retaliated by freezing Japanese assets in the U.S. and imposing an embargo on petroleum exports to Japan. The Pacific War started in December 1941 when Japan declared war against the U.S., Britain, the Netherlands and other allied countries.

To prosecute the war, the Japanese government concentrated the infusion of funds and manpower on the military industry sector and rationed materials and equipment to the sector on a priority basis.

The Basic Outline for the Buildup of War Potential and Enhancement of Enterprises, announced in June 1943, classified industries into three cate-

gories: (1) textile, foodstuff, paper/pulp, chemical and metal (non-military); (2) military; and (3) sundry. The first category was designated as the sector, the facilities of which would be transformed into ones for the production of military goods and the workers would be transferred to military sectors. Seventy-seven cotton spinning companies were unified into 14 blocks, with 50% of each block (companies with high productivity) allowed to continue spinning operations, 20% transformed into military factories and 20% ordered closed. A total of 11,324 male and 55,764 female workers at cotton spinning companies were transferred to factories of the war industry. Of major cotton spinning companies, Toyo Spinning, Dai-Nippon Spinning, Kureha Spinning and Nisshin Spinning companies were ordered to transform their facilities into military factories.

With the industrial realignment, production of textiles fell sharply (see diagram), while production war materials grew (iron and steel up to 1943 and machinery nonferrous metal up to 1944). Production of consumer goods continued to decline and the ration quota for foodstuffs and garments was curtailed year by year. As the distribution of consumer goods tended to be delayed or suspended toward the end of the war, urban residents went on foraging trips to farming villages to buy goods at black market prices and grew vegetables in their yards.

Steel industry

Nippon Steel Co. came into existence in 1934 through the merger of government-run Yawata Ironworks and five private steel companies. Nippon Steel's production of pig iron accounted for 96% of Japan's total production, crude steel 51%, and steel materials 44%, while other steel companies produced the remainder of crude steel and rolled steel. However, the yen's depreciation and higher customs duties raised the

prices of pig iron imports from India as well as scrap iron imported from other countries. This prompted ordinary steel companies (which produced steel from imported scrap iron and pig iron in open-hearth furnaces), to ask for government permission to transform themselves into integral steel companies (which would make steel from molten iron in revolving furnaces). The government enacted in 1937 a steel enterprise law, whereby steel companies owning blast furnaces with an annual production capacity of 100,000 tons were allowed to become integral steelmakers. The law also granted integral steel companies rights to receive government subsidies to promote transformation of steel companies into integral steelmakers. As a result, large blast furnaces with a daily production capacity of 1,000 tons were built at the Yawata and Hirohata ironworks of Nippon Steel Co. Previously, blast furnaces installed at Japanese steel companies were capable of producing 5,000 tons daily. The Yawata ironworks also installed in 1940 a strip mill capable of making band steel by means of sequential rolling. On the back of the enhancement of production capacity, production of crude steel continued to increase up to 1943.

Machinery industry

Machine tools

A buildup of facilities in the weapons, aircraft, shipbuilding and automobile industries since the start of the Sino-Japanese War boosted demand for machine tools.

Production buildup in the machine tool industry was achieved not so much by capital spending by major companies as by the founding of many small enterprises. Complexes of small machine tool companies were established in Tokyo's Honjo, Omori and Kamata districts as well as in Osaka's Taisho and Nishinari districts. The number of machine tool companies rose sixfold to more than

3,000 in 1939 from 500 in 1936. Production trebled in one year, from 20,000 units in 1937 to 60,000 units in 1938.

To protect and nurture the machine tool industry, the government enacted the machine tool manufacturing business law in 1938, under which establishment of machine tool companies with production capacity above certain levels were subjected to government approval, while licensed companies were provided with subsidies for importing high-performance mother machines. However, machine tool companies found themselves hard-pressed to import machine tools from Europe in 1939, followed by the U.S. export ban of machine tools in 1940. Production of general-purpose lathes reached an all-time high of 83,122 in 1939 but then spun into a downward spiral and plunged to 6,799 in 1945.

Automobiles

The automobile manufacturing business law, enacted in 1936, (1) subjected establishment of automobile manufac-

turing companies to government approval and provided for all possible government protection and assistance to licensed automobile manufacturing companies, and (2) ordered Ford Japan and General Motors Japan not to increase production in value terms. Three automobile companies were established to produce trucks: Toyota Motor Co. (formerly the automobile division of Toyota Automatic Spinning Co.), Nissan Motor Co. (formerly the automobile division of Tobata Foundry Co.), and Diesel Motor Co. (which would later be renamed Isuzu Motors Ltd.).

As Ford and General Motors withdrew from the Japanese market in 1939, domestic production of trucks increased steeply, from 1,000 in 1936 to 42,800 in 1941, making Japan the second largest truck producing country in the world after the U.S. Japan also ranked fourth in the world in overall automobile production. However, automobile production continued to decline during the war due to material shortages, to 30,000 tons in 1944 and further down to 5,000 in 1945.

Post-war recovery, 1945-54

When the War ended in August 1945, Japan found itself devastated with its cities, transportation facilities and factories destroyed by bombing. Hydroelectric plants, steel mills and shipyards remained intact, but production facilities of the machinery and chemical industries were in ruins. Industrial production continued to decline in 1945 and 1946, while retail prices in 1946 were six times higher than the previous year. Wage raises were unable to catch up with soaring prices and production sagged to one-sixth of the 1941 levels. Malnutrition and tuberculosis spread in the face of food shortages and galloping inflation.

A U.S. fact-finding mission dispatched to Japan in May 1948 found the country's industries operating at less than 45% of 1930-34 levels and listed material shortages, devastated factories and the collapse of transport facilities as the three stumbling blocks to the country's reconstruction. The mission, headed by Undersecretary of the Army William Draper, reported that it was

necessary to boost Japan's exports eight to nine times to earn foreign currencies needed to buy minimum foodstuff and raw materials. The report called on the U.S. to give assistance to Japan's imports of raw materials and to the promotion of exports of goods made with imported materials. The report expressed the hope that Japan would become economically independent with U.S. assistance, and cooperation from Asian countries. Based on the report, Japan started imports of industrial materials with U.S. reconstruction assistance in September the same year.

Textile industry

The production capacity of the Japanese textile



Isuzu Motors Ltd. and Roots Motors of Britain join-up in manufacturing the Hilman Minks (launched in October 1953).

Photo: Isuzu Motors Ltd

industry at the end of the war was only 20%–30% of the 1941 level, but the industry recovered quickly, ahead of other industries. Cotton textile manufacturers in Shizuoka and Aichi prefectures and silk and nylon textile manufacturers in Fukui Prefecture quickly repaired their weaving machines and purchased new models with loans from the Reconstruction Loan Corporation. They soon owned half of what they did before the war. Japan was allowed to import U.S. cotton under U.S. reconstruction assistance on condition that 60% of cotton textiles produced with U.S. cotton would be exported to pay for cotton imports. With the introduction of a processing-on-consignment system, textile manufacturers were spared the ordeal of securing raw materials and securing working capital as they expanded production. Under the management of the Allied Occupation Headquarters, Japan started exports of a large amount of cotton products, first to Indonesia.

The worldwide arms expansion following the outbreak of the Korean War in 1950 spurred demand for textile products on global markets. Accordingly, export prices of cotton yarn jumped to



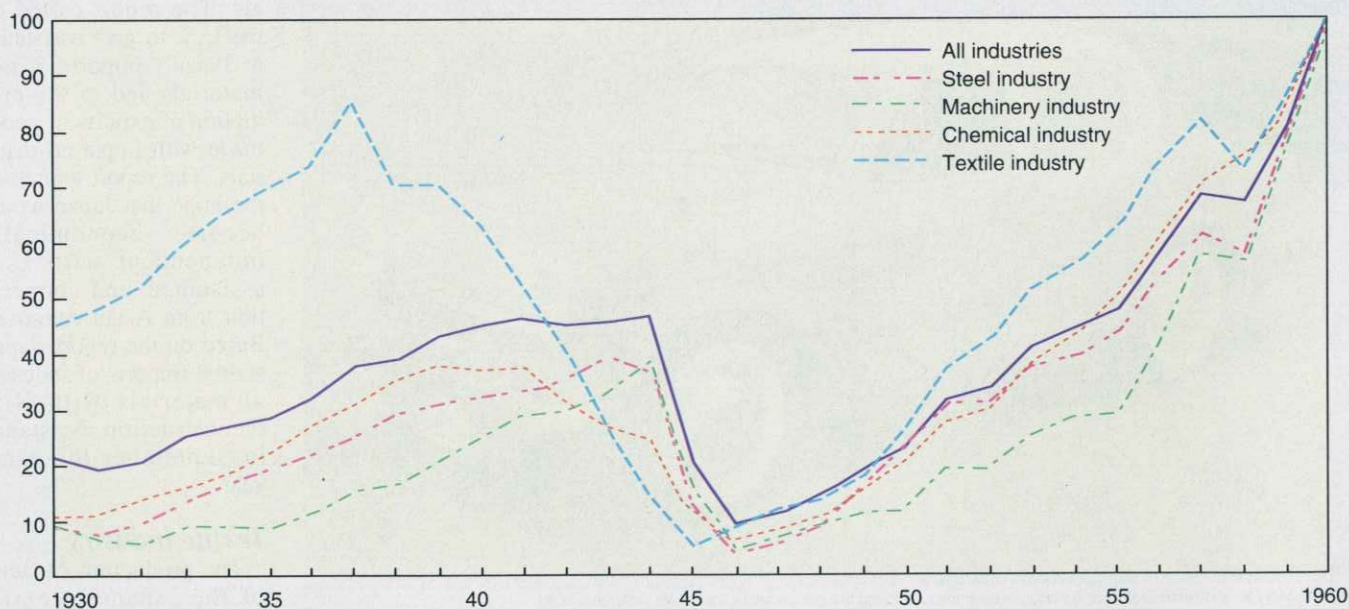
Photo: Toyota Motor Co.

Toyota's purely domestic Toyopet Crown (launched in January 1955)

¥250,000 per 400-pound bale, three times the official domestic price of ¥80,000. Driven by soaring demand, textile companies expanded capital spending and new companies were established one after another. The number of textile companies and factories

increased to 91 and 173, respectively, at the end of 1951, and from 51 and 119 at the end of the previous year. When the initial boom was over, the textile companies marketed their products at bargain prices in domestic markets, which in turn boosted domestic consumption of

Changes in industrial production index for 1930–1960 (base year 1960)



textile products, most notably from 1951 to 1954. Japan's per-capita consumption of textile products, which plunged to two pounds in 1945, rose slightly to three pounds in 1946-1949 and zoomed to 14 pounds in 1954, recovering to the prewar level. Japan had already become the largest exporter of cotton textiles and rayon in the world in 1952, with textile exports accounting for 20% of the nation's total exports. Japan's postwar economic recovery started with textile exports just as the nation's economy relied on textile exports before the war.

Steel industry

Steel production plummeted after peaking out in 1943. Japanese steelmakers had total annual production capacity of 11 million tons in 1946, but actual production of pig iron and crude steel during the year was down to 200,000 tons and 560,000, respectively, because materials (iron ore) and fuel (coal) were not available. In December 1946, the government adopted a priority production system, whereby coal was supplied to the three blast furnaces of the Yawata Ironworks of Nippon Steel Co. on a priority basis, and steel produced there was preferentially distributed to the coal sector. This initiative enabled the nation to gradually improve steel production levels. Nippon Steel Co. was split into Yawata and Fuji Steel Companies under a decentralization program in 1950, but the Korean War, which started shortly afterward, boosted special procurement and exports of steel and steel production rebounded to prewar levels in due course. To meet the increasing demand, steel companies pursued efforts to raise production. Kawasaki Steel Co. built an integral pig iron mill in Chiba, while Sumitomo Metal Industries Co. merged with Kokura Steel Co. and Kobe Steel Co. merged with Amagasaki Steel Co. The three companies thus succeeded in transforming themselves into integral steel manufacturers and joining the ranks of Yawata Steel, Fuji Steel and Nippon Kokan companies. Under the first steel industry rationalization program (1951-55), the six companies worked hard to introduce new technologies and modernize their rolling steel

factories, particularly through the introduction of strip mills.

Machinery industry

Automobiles

Motor vehicles produced between 1945 to 1947 were mostly trucks, motorcycles and motor-tricycles. Production of motorcycles totaled 7,754 in 1948 and that of motor-tricycles and trucks reached 29,727 and 25,560, respectively, in 1949, all topping prewar levels. Major automakers like Toyota, Nissan and Isuzu received additional orders for 10,000 cars worth ¥9.8 billion in the wake of the 1950 Korean War and earned huge windfall profits, which enabled them to launch passenger cars in technical tie-ups with foreign automakers. Nissan concluded a license agreement with Austin of Britain, under which Nissan imported Austin components and assembled Austin cars. Hino Diesel started license production of Renault cars under a tie-up with Renault of France. Isuzu Motor struck up a partnership with Roots Motors of Britain to assemble Hilman Minks cars. Nissan obtained car-making know-how through the assembly of Austin cars and turned out a prototype of the Datsun 110 compact car in 1954, followed by the start of commercial production by the end of the year. Only Toyota pursued automobile development independently, without relying on any foreign maker, and in January 1955 the Toyopet Crown sedan made its debut. Automobile production (passenger cars, trucks and buses combined), which plunged to 5,000 in 1945, recovered to 49,778 in 1953, topping the prewar record production level of 46,000 achieved in 1941. The pace of production grew fast and reached the 70,000 level in 1954.

Electric machinery

The priority production system helped expand capital investment in the coal, steel and electric power industries. Reconstruction of the electric machinery industry was led by heavy electric machinery. Production of household electric products such as radios and electric lights also recovered, and ownership of small radio sets and fluorescent lights,

along with bicycles, spread fast among consumers during the 1950-54 period. As production of household electric appliances such as electric fans, radios and washing machines picked up, light electric appliances gained weight in the electric machinery industry. Television broadcast started in Japan in 1953 but ownership of TV sets was very limited as Japanese electric machinery makers hardly had the technology to produce commercially viable TV sets. One Japanese electric machinery maker after another concluded license contracts with Radio Corporation of America (RCA) which then owned basic TV production patents. Tokyo Tsushin Kogyo Co., which would later become Sony Corp., started production of transistors with technical assistance from Western Electric of the U.S. in 1954.

Machine tools

Japan still lagged far behind Western countries in machine tool technology after the war and the automobile, optical machinery, communications machinery and heavy electric machinery industry sectors all imported large high-performance machine tools. Major machine tool makers such as Tsugami Corp., Niigata Engineering Co., and Toyota Machine Works licensed technology from foreign machine tool makers to enhance their technological levels, and gradually managed to expand production while narrowing technological gaps with their Western counterparts. In 1952, the Japanese government started granting subsidies for machine tool imports to encourage imports of mother machines, financing half of the costs for machine tool imports. The measure boosted machine tool imports, which outpaced domestic production in 1955. The government also started awarding grants for the development of machine tools to encourage domestic production of high-performance products. ■

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