

"INDUSTRIAL ACHIEVEMENTS OF JAPAN: A HISTORICAL PERSPECTIVE (1870-1990)"

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The term industry is always divided into three parts, viz, Primary, Secondary and Tertiary.

The industrial progress of Nippon (the land of rising sun), may be viewed by dividing it into two main periods.

1. Early modernization from Meiji Restoration (1868–1945).
2. Contemporary Modern Period (1945–1990).

During the first period, capitalism was established in Japan and industrial revolution started from 1880's. From 1887 to 1896, light industry, specially textiles were developed rapidly, and from 1897 – 1906 the heavy industries were established. Industries of railroads, mining, shipbuilding, iron and steel, and machine tool factories were developed, which were later on turned to the private enterprise.

During the First World War, the Japanese industry experienced significant growth, for, the European supplies were preoccupied with war and Japan had a chance to advance into the Asian markets. Japan provided allies with military supplies and its shipping services were in great demand. Values of Japanese exports rose three-fold, generating industrial boom and rapid accumulation of capital. During the war agricultural production was surpassed by the industrial production and progress. Japanese economy was laced with sound capitalistic base and capitalism became fully entrenched in Japan.

Economic obstacles caused by depression of 1920, the Tokyo Earthquake of 1923 and World Depression of 1930's (SHOWA), could not hamper the productivity of Japanese industry. Because of technological development of managerial skills and securement of employee's loyalty and persistence, the years of turmoil were passed successfully and industrial progress continued

in a stimulative way. Heavy industries like iron and steel, shipbuilding, chemical industry, machine tools, electric machinery and ceramics greatly expanded during the decade of 1930–1940. Exports of textile and sundry goods rose sharply. Machinery industry served as foundation for Japan's arms and ammunitions industry, where as domestic products fully met the local demand.¹ In the course of this period, Japan was never faced with any sort of anti-monopolistic attitudes and policies. Leaders of the time successfully maintained the national survival against the western political and economic dominations. In the war time, the administration of the country fully supported the policies of well established industrial giants and group of companies such as Mitsui, Mitsubishi and Sumitomo. Zaibatsu (financial tycoons) the industry-dominating class used their resources valorously for the industrial build-up of Japan and exercised their oligopolistic control over the side range of industries including manufacturing, mining, transportation, finance and foreign trade.

In the meanwhile this industrial progress and achievement generated two factions, first, limited number of large firms with capital – intensive production methods and, second, vast number of low-capital small firms and family concerns with labour-intensive methods of production. e.g. in 1930, about 60% of the manufacturing labour was employed in the small firms with 10 workers only. This gradually fell to 9% in 1986, reflecting the achievement of dual structure of industrial employment and co-existence. This facilitated the high proportion of small scale business to keep its survivalism intact against larger firms. Such inter – dependency of relationship may be considered the backbone characteristic of present-day economic pattern of Japan, based on maintaining the statusqo of co-existence and co-survivalism.

Good number of new industries emerged between the two world wars. Development of electric power industry tremendously boosted-up domestic aluminum – smelting industry. The development of radio led the beginning of vacuum tube production. New enterprises like Toshiba corporation and Victor company of Japan, Ltd., Toyota Motor Corporation, Nissan Motor Co. Ltd., and Mitsubishi Heavy Industries, Ltd., etc., came into

being during this period. Subsidies helped the production of military vehicles and domestic productions were substituted for the import of cargo ships. An iron and steel Trust-Nippon Steel Co. (Nippon Seitetsu) came into emergence under the governmental guidance and support. Legal coverage was duly enacted to foster the individual industries like automobiles, the petrochemicals, iron and steel, machine tools, aircraft manufacturing etc. Legal Amendments in infant automotive industry changed in Automobile manufacturing industry Law of 1935 and others, pushed up the industrial progress of Japan by leaps and bounds.

During the time of second world war, Japan was vastly devastated and it had to bear the colossal losses in all sectors of economy. The war rampage ravaged the economy rampantly. However, the Govt. of Japan, played active role to reconstruct and rebuild the annihilated sectors of the economy, with specific stress on the restoration and renovation of industry. An amended new industrial policy, known as priority production program was started to gain the recovery of under developed and destroyed capacity of industries. Bottle-necks limiting the overall growth and achievement were removed, to rapidly reconstruct electric power, iron and steel, marine transportation and coal industries etc.

In the second phase, i.e. contemporary modern period, the Korean war (1950-1953), played a significant role for the renovation and reconstruction of the Japanese industry. It served as a boom for the Japanese industry, to come out of the stagnation, it was immersed during the war ravages, which continued till the end of 1940's. Availing the chance, Japan supplied the serving U.N. forces in Korea, with vast quantities of material, enabling itself to earn foreign exchange in abundance, deadly required for the payment of vital imports. Earnings from the Korean war created the stimulus for the quick recovery of the economy during 1950's.

In the span of 20 years (1950-1970) rapid growth was achieved and industries like iron and steel, construction, pharmaceutical, household, electrical, petrochemical etc., were fully developed. Finding the international environment favourable

for the Japanese exports, the industrial products were manufactured in the pattern of international requirement, taste and standard. In 1960's, Japan's average export increase of 18.4% per year, was 2.5% of the overall increase in the world trade.² This necessitated the establishment of an industrial structure based on imported raw-materials, which were domestically processed and produced for exports.

Export oriented success of iron and steel, as well as, shipbuilding industries, induced precision machinery, industries of electronic and optical equipment to manufacture for exportable products. Consequently, export led growth of industry in Japan, attracted huge investments for heavy industries, specially in the belt located in the Tokaido megapolis, which stretches along the pacific coast from Tokyo to Osaka and Kobe.

Industrial complexes were constructed at Sakai, Mizushima, Fukuyama, Kashime, Ibaraki Prefecture etc. Mutsuogawara, Tomakomai and Shibushi Bay, were located at the northern and southern extremes of Japan. Such plants were expanded and altered according to the changes in demand and time. As the investments in plant and equipment exceeded the profits, the ratio of borrowed capital also increased proportionately.³ Increased demand for financial requirement of aggressive management was met by banks through household saving deposits. Relationship between various corporations and banks was interlaced and closely knitted. Industrial groups were formed around the major banks (keiretsu), and other financial institutions. Aggressive corporate capitalism and greater reliance on indirect financing became the main characteristic of the Japanese industrial structure. It was named as an order of the day, as it served as basic mechanisms of strong economic growth with a major stimulating role of industry. Japan's national income was more than double in 1960's and its GNP was the second largest among the developed market economies of the world. Spring labor offensive (Shunto) achieved the name of established mechanism, through which more equitable income distribution could be bargained, during 1960's.

The oil-crisis of 1973, compelled the industrialists to reduce the costs and increase efficiency, which further strengthened the competitiveness of major export – oriented industries. Because of successful conservation efforts, energy demand fell by 37% in chemical and 20% in iron and steel industry. Energy saving efforts enabled the automobiles industry to manufacture lighter automobiles with increased fuel economy, which resulted in increased export competitiveness. The oil crisis of 1979, distinctively caused changes in the industrial structure of the country. Heavy industrial productions were slowed down and emphasis shifted to the electronics and automobile industries, which utilize highly sophisticated technology and machinery.

Innovations paved the way for increased productivity. Small computers were brought into use to develop numerically controlled equipment. During the late 1970's, computer industry and semiconductor industry began to develop rapidly.

Looking at the industrial structure one may find since 1960's, primary industry in Japan is consisted of food crops, industrial crops, forestry, fisheries, livestock, breeding for fibres. Mining and light industry includes, tobacco, coal, lignite, iron ore, non-ferrous metal ores, crude metal ores, crude oil and natural gas, beverages, milled grains, natural fibres spinning, printing and publishing, cloth and other textile products, furniture, lumber and wood products, pulp and paper, rubber products, butchering, meats, dairy products, spinning of chemical fibres, weaving apparel, leather and leather products.

Simultaneously, chemical and heavy industries and construction includes petroleum products, ceramics, earthen and stone products, precision instruments, civil engineering, basic chemical products, raw-materials for chemical fibres, coal products, primary non-ferrous metal products, machinery, electrical equipment, transportation equipment, construction, pig-iron, crude steel, primary steel products.

The recently diversified mode of tertiary industries may be seen in the shape of city gas service, water works, commerce, finance and insurance, real estate, communications, community

services, electric power, transportation, real estate transportation, govt. service, finance and insurance.

All the three sectors of industrialization, extended its effects on the overall economy and stimulation of internal growth was made possible. Shift from primary to light perpetuating to the development of heavy industry in the post-war years, made the Japanese economy viable and ushered in tremendous progress in exports and earning foreign exchange. Such industrial structure won the Japan the position of Industrial Giant in the world.

Generally, a national economy in the early stages of development is dominated by primary production. With the rise in income and development of economy, the primary sector's share starts declining, but secondary's share starts rising, which in the long run moves towards declining and paves the way for the rise of tertiary contributions. In Japan such transformation was rapid, specially between the period of two world wars. After 1960, agricultural labor in Japan receded in absolute terms and ultimately only old, retarded and part time farmers worked in agriculture. While in Secondary employment and production continued to rise till 1970's. After wards tertiary sector not only maintained its stable share in net domestic product but surpassed secondary after 1980's and onwards.

As regards industrial contribution, one may estimate that light manufacturing accounted for 85% of the total production till 1900. Textile output jumped over 25% of the total production in 1890's, against 10% in 1870's. This proportion increased by 30% upto second world war (1940). It provided significant employment opportunities for surplus female agricultural labor. But after second world war, it started declining and by 1990, hardly consumed 3.1% of the national labor force.

In heavy sector, iron and steel industry started expanding from 1901 and onward. After the second world war, basic metals maintained its stable share in the manufacturing output. The machine tool industry made a spectacular expansion from 1945 and onwards. Its share in manufacturing output exceeded 40%

by 1972 and Japan became leading exporter of machinery. The chemical industry's share rose to 20% in post war against 10% in pre-war years.

As regards industrial structure it may be mentioned that primary sector contributed 45% to GNP in 1888, which fell to 4% in 1980, while the secondary sector's share went up from 55% to 96% in the corresponding period, but the tertiary sector's share was very minute, during all these long years. However, the secondary sector's share after achieving climax, after 1970 started declining from 51% to 48%, whereas tertiary's share went upto 48% in 1981. It reflects the transformation of modern economic growth i.e. decrease in dependence on secondary and increase in dependence on tertiary sector.

Presently, the developed economies including Japan are enjoying the stage of post-industrialism, which reflects decrease of employment in secondary sector and shift from production of goods to services. Such "Services Revolution", brings the growth of tertiary industries. In 1990, the tertiary sector of Japan contributed 60.8% of the total output and employed 59% of the national labor force.

The format, structure and composition of national exports and imports reflect the financial position and strength of economy and quality of industrialization. From 1860 – 1929, Japan may be regarded a country of exporting tea and raw silk. Since 1930's, cotton replaced raw silk. In the post war period, more than 50% exports were consisted of light manufacturers, which later on shifted to heavy industrial products by attaining the share of 87% of the total value of exports by 1990. As regard imports, it may observed that during the early Meiji period, full demand of manufactured goods was met through imports. Slowly and gradually, Japan was enabled to substitute manufactured imports with crude materials. Consequently, in 1930's, Japanese balance of trade position showed import of 12% in light manufacturing against 16% in 1990, 30% in heavy manufactures against 31%, 18% in food stuffs against 14%, 33% in raw materials against 22%, 7% in fuels against 3%, in 1990, respectively.⁴

Industrial exports growth rate of Japan was 1.8% in 1960's, as compared to 2.7% in 1950's, against world's growth rate, which went up from 4.4% in 1951 to 10% in 1961-70. Foreign growth rate of Japan as a whole was 11.9% in 1950's, which rose to 18% in 1960's, which helped Japanese economy to maintain its actual growth rate of GNP at 8.3% in 1950's and 10.5% in 1960's.

In 1970's, the surplus labor force numbering to 482000 or 6% of the total of post war Japan was fully employed and conditions of surplus labor were changed to scarce labor force, which partially raised the level of wages. "Investment begets investment" came into being through chemical and heavy industrialization. Japan in 1960's was being recognized as "Economic super power" or "GNP super power" or "The Switzerland of the Orient."

By 1972, because of increased exports and entrance into international competitiveness, rapid growth of the economy was achieved and "Rebuilding the Japanese Archipelago" became the theme of the political leadership and 10% rate of growth was dreamed to be continued till 1985. Between 1967-71, Japan's exports increased from \$ 10.4 billion to \$ 24 billion, showing an increase of \$ 13 billion. From this exports of chemical and heavy industrial products were increased from \$ 6.8 billion to \$ 17.9 billion, reflecting the growth of \$ 11.1 billion or 82% of the total increase of the Japanese exports. In this automobiles gained a remarkable position, followed by television sets, tape recorders, steel, synthetic fibres, the textiles. Balance of payments had sustained a large surplus, where 360 yen to \$ 1 was the rate of exchange, against the present rate of 120 yen for one US dollar.⁵

Japan started realizing the benefits of reconstruction of modern industries, production of internationally competitive goods and opening up of world markets and is proud of rising again from the ruinace of the war. In late 1980s, lines of highly competitive industrial products like aircraft and computers were also achieved.

CONCLUSION:

While concluding it may be mentioned that Japan heavily relied upon the export oriented industries for the economic recovery of the war devastated economy, yen appreciation had further reduced price competitiveness for the Japanese exports. Consequently, the role of intimate relationship between business and government was emphasised upon to further increase industrial competitiveness. Government identified key industrial sectors for development and encouraged major corporations to acquaint themselves with necessary research, investment and development. Both government and private sector played their due role in the industrial development of Japan. The government of Japan has been streamlining its industrial policies to continuously promote- government private sector co-operation and good labor – management relations. Such actions may serve as an instrumental effort in achieving rapid growth of industry and technological progress.

Rapid industrial growth has boosted economic stimulation which resulted in swift and quick changes in Japanese economy and society. In present times of economic stalemate, Japan has surged in GDP by 1.9%, which may help it to stimulate its economy and get the momentum of industrial growth restituted. Japan may implement stimulus measures to restore domestically led growth in demand and pursue structural measures to enhance the industrial efficiency and competitiveness. For that purpose, European Central Bank is being attracted to intervene the financial market to curb the rising yen, for, the surge in Japanese currency can threaten to eat into exporter's profits.

Moreover, Japan, as usual is bound to look for imports for its energy resources and raw materials for its import – based industrial development. It seems to be very difficult to achieve the rate of self-sufficiency in items like crude oil, iron ore, coal, raw-cotton, wool, rubber, leather goods, food, wheat, corn, barley, lumber. It may be obviously understood, that Japanese industrial development is strictly stretched and inter-wooven on imports and its dependence is always interlaced on the quantum of foreign trade and import of raw-materials.

However, Japan is continuing to shoulder the responsibilities of world economic stability and equilibrium. This may help to secure Japan's own economic stability. Diversification of economy is always sought by the dynamism of Japan's cultural receptivity, developed through the long history of introducing culture and technology from China, which has facilitated the nation to adopt new technology. Present day developing world can learn a lot from Japanese experience.

In the recent times, the structure of the Japanese industry has changed dramatically. While the share of primary industries declined after world war-II, against secondary's increased in the 1960's and peaked in 1970 and then gradually declined which enabled the tertiary industry to increase its share in 1970's. The share of primary industry in GDP decreased to 2.0% in 1994, and 1.8% in 1996 against 5.9% in 1970, while secondary's went down to 34% and 33.7% against 43% in the corresponding years. The share of manufacturing fell to 23.5% and 23.3% against 34.9% during the same years, whereas of mining and construction raised to 10.3% in 1996 against 8.3% in 1970. The share of tertiary industries went up to 69.9% in 1994, as compared to 51% in 1970, while the share of whole sale and retail industry went down to 12.2% in 1994 and 11.7% in 1996 against 13.9%, in 1970.⁶

Such trends have transformed the Japanese industrial base, to change its social and economic overhead capital, which has been enabling the economy to further improve labor productivity through rationalization and labor – saving investments. Energy and resource – saving investments are helping to reduce production costs and increase the high value – added products.

Climate of favourable industrial relations has knitted the industry with technological innovations like factory automation and office automation, which has generated increases in productivity of Japanese industrial enterprises.

REFERENCES:

1. Co-Ordination Bureau, Economic Planning Agency, "The Japanese Economy: Recent Trends and out look", Government of Japan, Tokyo, 1997, p.98.
2. Economic Planning Agency, "Economic Outlook", Government of Japan, Tokyo, 1991.
3. Foreign Press Centre, "Facts and Figures of Japan", Nippon Press, Tokyo, 1997, p.40 and others.
4. Government of Japan, "Economic Outlook", Planning Agency, Tokyo, 1994, pp.25-30 and others.
5. Hiromatsu Takeshi, "Japan's Economic Development," International Society for Educational Information, Tokyo, 1990, pp.87, 98 and others.
6. Kazushi Ohkawa and Henry Rosovsky, "Japanese Economic Growth: Trend Acceleration in the Twentieth Century", Stanford University Press, U.S.A., 1973., p-7.
7. Kodansha American Inc., "Japan: Profile of a Nation", 1st edition, N.Y., 10011, U.S.A. p-128 and others.
8. Ryoshin Minami, "The Economic Development of Japan, A Quantitative Study", Hitosubashi University, Tokyo, 1989.
9. Takafusa Nakamura, "The Post War Japanese Economy, Its Development and Structure", University of Tokyo Press, Tokyo, 1981, p-1, 151 and onwards.