

The Legacy of Autarky and the Proto-Industrial Economy: Achievements of Tokugawa Japan (1600-1868)

Why Japan?

Given the relatively poor record of countries outside the European cultural area — few achieving the kind of “catch-up” growth Japan managed between 1880 and 1970 — the question naturally arises: why Japan? After all, when the United States forcibly “opened Japan” in the 1850s and Japan was forced to cede extra-territorial rights to a number of Western nations as had China earlier in the 1840s, many Westerners and Japanese alike thought Japan’s prospects seemed dim indeed.

Tokugawa achievements: urbanization, road networks, rice cultivation, craft production

In answering this question, Mosk (2001), Minami (1994) and Ohkawa and Rosovsky (1973) emphasize the achievements of Tokugawa Japan (1600-1868) during a long period of “closed country” autarky between the mid-seventeenth century and the 1850s: a high level of urbanization; well developed road networks; the channeling of river water flow with embankments and the extensive elaboration of irrigation ditches that supported and encouraged the refinement of rice cultivation based upon improving seed varieties, fertilizers and planting methods especially in the Southwest with its relatively long growing season; the development of proto-industrial (craft) production by merchant houses in the major cities like Osaka and Edo (now called Tokyo) and its diffusion to rural areas after 1700; and the promotion of education and population control among both the military elite (the *samurai*) and the well-to-do peasantry in the eighteenth and early nineteenth centuries.

Tokugawa political economy: daimyo and shogun

These developments were inseparable from the political economy of Japan. The system of confederation government introduced at the end of the fifteenth century placed certain powers in the hands of feudal warlords, *daimyo*, and certain powers in the hands of the *shogun*, the most powerful of the warlords. Each *daimyo* — and the *shogun* — was assigned a geographic region, a domain, being given taxation authority over the peasants residing in the villages of the domain. Intercourse with foreign powers was monopolized by the *shogun*, thereby preventing *daimyo* from cementing alliances with other countries in an effort to overthrow the

central government. The *samurai* military retainers of the *daimyo* were forced to abandon rice farming and reside in the castle town headquarters of their *daimyo* overlord. In exchange, *samurai* received rice stipends from the rice taxes collected from the villages of their domain. By removing *samurai* from the countryside — by demilitarizing rural areas — conflicts over local water rights were largely made a thing of the past. As a result irrigation ditches were extended throughout the valleys, and riverbanks were shored up with stone embankments, facilitating transport and preventing flooding.

The sustained growth of proto-industrialization in urban Japan, and its widespread diffusion to villages after 1700 was also inseparable from the productivity growth in paddy rice production and the growing of industrial crops like tea, fruit, mulberry plant growing (that sustained the raising of silk cocoons) and cotton. Indeed, Smith (1988) has given pride of place to these “domestic sources” of Japan’s future industrial success.

Readiness to emulate the West

As a result of these domestic advances, Japan was well positioned to take up the Western challenge. It harnessed its infrastructure, its high level of literacy, and its proto-industrial distribution networks to the task of emulating Western organizational forms and Western techniques in energy production, first and foremost enlisting inorganic energy sources like coal and the other fossil fuels to generate steam power. Having intensively developed the organic economy depending upon natural energy flows like wind, water and fire, Japanese were quite prepared to master inorganic production after the Black Ships of the Americans forced Japan to jettison its long-standing autarky.

From Balanced to Dualistic Growth, 1887-1938: Infrastructure and Manufacturing Expand

Fukoku Kyohei

After the Tokugawa government collapsed in 1868, a new Meiji government committed to the twin policies of *fukoku kyohei* (wealthy country/strong military) took up the challenge of renegotiating its treaties with the Western powers. It created infrastructure that facilitated industrialization. It built a modern navy and army that could keep the Western powers at bay and

establish a protective buffer zone in North East Asia that eventually formed the basis for a burgeoning Japanese empire in Asia and the Pacific.

Central government reforms in education, finance and transportation

Jettisoning the confederation style government of the Tokugawa era, the new leaders of the new Meiji government fashioned a unitary state with powerful ministries consolidating authority in the capital, Tokyo. The freshly minted Ministry of Education promoted compulsory primary schooling for the masses and elite university education aimed at deepening engineering and scientific knowledge. The Ministry of Finance created the Bank of Japan in 1882, laying the foundations for a private banking system backed up a lender of last resort. The government began building a steam railroad trunk line girding the four major islands, encouraging private companies to participate in the project. In particular, the national government committed itself to constructing a Tokaido line connecting the Tokyo/Yokohama region to the Osaka/Kobe conurbation along the Pacific coastline of the main island of Honshu, and to creating deepwater harbors at Yokohama and Kobe that could accommodate deep-hulled steamships.

Not surprisingly, the merchants in Osaka, the merchant capital of Tokugawa Japan, already well versed in proto-industrial production, turned to harnessing steam and coal, investing heavily in integrated spinning and weaving steam-driven textile mills during the 1880s.

Diffusion of best-practice agriculture

At the same time, the abolition of the three hundred or so feudal fiefs that were the backbone of confederation style-Tokugawa rule and their consolidation into politically weak prefectures, under a strong national government that virtually monopolized taxation authority, gave a strong push to the diffusion of best practice agricultural technique. The nationwide diffusion of seed varieties developed in the Southwest fiefs of Tokugawa Japan spearheaded a substantial improvement in agricultural productivity especially in the Northeast. Simultaneously, expansion of agriculture using traditional Japanese technology agriculture and manufacturing using imported Western technology resulted.

Balanced growth

Growth at the close of the nineteenth century was balanced in the sense that traditional and modern technology using sectors grew at roughly equal rates, and labor — especially young girls

recruited out of farm households to labor in the steam using textile mills — flowed back and forth between rural and urban Japan at wages that were roughly equal in industrial and agricultural pursuits.

Geographic economies of scale in the Tokaido belt

Concentration of industrial production first in Osaka and subsequently throughout the Tokaido belt fostered powerful geographic scale economies (the ability to reduce per unit costs as output levels increase), reducing the costs of securing energy, raw materials and access to global markets for enterprises located in the great harbor metropolises stretching from the massive Osaka/Kobe complex northward to the teeming Tokyo/Yokohama conurbation. Between 1904 and 1911, electrification mainly due to the proliferation of intercity electrical railroads created economies of scale in the nascent industrial belt facing outward onto the Pacific. The consolidation of two huge hydroelectric power grids during the 1920s — one servicing Tokyo/Yokohama, the other Osaka and Kobe — further solidified the comparative advantage of the Tokaido industrial belt in factory production. Finally, the widening and paving during the 1920s of roads that could handle buses and trucks was also pioneered by the great metropolises of the Tokaido, which further bolstered their relative advantage in per capita infrastructure.

Organizational economies of scale — zaibatsu

In addition to geographic scale economies, organizational scale economies also became increasingly important in the late nineteenth centuries. The formation of the *zaibatsu* (“financial cliques”), which gradually evolved into diversified industrial combines tied together through central holding companies, is a case in point. By the 1910s these had evolved into highly diversified combines, binding together enterprises in banking and insurance, trading companies, mining concerns, textiles, iron and steel plants, and machinery manufactures. By channeling profits from older industries into new lines of activity like electrical machinery manufacturing, the *zaibatsu* form of organization generated scale economies in finance, trade and manufacturing, drastically reducing information-gathering and transactions costs. By attracting relatively scarce managerial and entrepreneurial talent, the *zaibatsu* format economized on human resources.

Electrification

The push into electrical machinery production during the 1920s had a revolutionary impact on manufacturing. Effective exploitation of steam power required the use of large central steam engines simultaneously driving a large number of machines — power looms and mules in a spinning/weaving plant for instance – throughout a factory. Small enterprises did not mechanize in the steam era. But with electrification the “unit drive” system of mechanization spread. Each machine could be powered up independently of one another. Mechanization spread rapidly to the smallest factory.

Emergence of the dualistic economy

With the drive into heavy industries — chemicals, iron and steel, machinery — the demand for skilled labor that would flexibly respond to rapid changes in technique soared. Large firms in these industries began offering premium wages and guarantees of employment in good times and bad as a way of motivating and holding onto valuable workers. A dualistic economy emerged during the 1910s. Small firms, light industry and agriculture offered relatively low wages. Large enterprises in the heavy industries offered much more favorable remuneration, extending paternalistic benefits like company housing and company welfare programs to their “internal labor markets.” As a result a widening gulf opened up between the great metropolitan centers of the Tokaido and rural Japan. Income per head was far higher in the great industrial centers than in the hinterland.

Clashing urban/rural and landlord/tenant interests

The economic strains of emergent dualism were amplified by the slowing down of technological progress in the agricultural sector, which had exhaustively reaped the benefits due to regional diffusion from the Southwest to the Northeast of best practice Tokugawa rice cultivation. Landlords — around 45% of the cultivable rice paddy land in Japan was held in some form of tenancy at the beginning of the twentieth century — who had played a crucial role in promoting the diffusion of traditional best practice techniques now lost interest in rural affairs and turned their attention to industrial activities. Tenants also found their interests disregarded by the national authorities in Tokyo, who were increasingly focused on supplying cheap foodstuffs to the burgeoning industrial belt by promoting agricultural production within the empire that it was assembling through military victories. Japan secured Taiwan from China in 1895, and formally brought Korea under its imperial rule in 1910 upon the heels of its successful war against Russia

in 1904-05. Tenant unions reacted to this callous disrespect of their needs through violence. Landlord/tenant disputes broke out in the early 1920s, and continued to plague Japan politically throughout the 1930s, calls for land reform and bureaucratic proposals for reform being rejected by a Diet (Japan's legislature) politically dominated by landlords.

Japan's military expansion

Japan's thrust to imperial expansion was inflamed by the growing instability of the geopolitical and international trade regime of the later 1920s and early 1930s. The relative decline of the United Kingdom as an economic power doomed a gold standard regime tied to the British pound. The United States was becoming a potential contender to the United Kingdom as the backer of a gold standard regime but its long history of high tariffs and isolationism deterred it from taking over leadership in promoting global trade openness. Germany and the Soviet Union were increasingly becoming industrial and military giants on the Eurasian land mass committed to ideologies hostile to the liberal democracy championed by the United Kingdom and the United States. It was against this international backdrop that Japan began aggressively staking out its claim to being the dominant military power in East Asia and the Pacific, thereby bringing it into conflict with the United States and the United Kingdom in the Asian and Pacific theaters after the world slipped into global warfare in 1939.

Reform and Reconstruction in a New International Economic Order, Japan after World War II

Postwar occupation: economic and institutional restructuring

Surrendering to the United States and its allies in 1945, Japan's economy and infrastructure was revamped under the S.C.A.P (Supreme Commander of the Allied Powers) Occupation lasting through 1951. As Nakamura (1995) points out, a variety of Occupation-sponsored reforms transformed the institutional environment conditioning economic performance in Japan. The major *zaibatsu* were liquidated by the Holding Company Liquidation Commission set up under the Occupation (they were revamped as *keiretsu* corporate groups mainly tied together through cross-shareholding of stock in the aftermath of the Occupation); land reform wiped out landlordism and gave a strong push to agricultural productivity through mechanization of rice cultivation; and collective bargaining, largely illegal under the Peace Preservation Act that was

used to suppress union organizing during the interwar period, was given the imprimatur of constitutional legality. Finally, education was opened up, partly through making middle school compulsory, partly through the creation of national universities in each of Japan's forty-six prefectures.

Improvement in the social capability for economic growth

In short, from a domestic point of view, the social capability for importing and adapting foreign technology was improved with the reforms in education and the fillip to competition given by the dissolution of the *zaibatsu*. Resolving tension between rural and urban Japan through land reform and the establishment of a rice price support program — that guaranteed farmers incomes comparable to blue collar industrial workers — also contributed to the social capacity to absorb foreign technology by suppressing the political divisions between metropolitan and hinterland Japan that plagued the nation during the interwar years.

Japan and the postwar international order

The revamped international economic order contributed to the social capability of importing and adapting foreign technology. The instability of the 1920s and 1930s was replaced with replaced with a relatively predictable bipolar world in which the United States and the Soviet Union opposed each other in both geopolitical and ideological arenas. The United States became an architect of multilateral architecture designed to encourage trade through its sponsorship of the United Nations, the World Bank, the International Monetary Fund and the General Agreement on Tariffs and Trade (the predecessor to the World Trade Organization). Under the logic of building military alliances to contain Eurasian Communism, the United States brought Japan under its “nuclear umbrella” with a bilateral security treaty. American companies were encouraged to license technology to Japanese companies in the new international environment. Japan redirected its trade away from the areas that had been incorporated into the Japanese Empire before 1945, and towards the huge and expanding American market.

Miracle Growth: Soaring Domestic Investment and Export Growth, 1953-1970

Its infrastructure revitalized through the Occupation period reforms, its capacity to import and export enhanced by the new international economic order, and its access to American technology bolstered through its security pact with the United States, Japan experienced the dramatic

“Miracle Growth” between 1953 and the early 1970s whose sources have been cogently analyzed by Denison and Chung (1976). Especially striking in the Miracle Growth period was the remarkable increase in the rate of domestic fixed capital formation, the rise in the investment proportion being matched by a rising savings rate whose secular increase — especially that of private household savings — has been well documented and analyzed by Horioka (1991). While Japan continued to close the gap in income per capita between itself and the United States after the early 1970s, most scholars believe that large Japanese manufacturing enterprises had by and large become internationally competitive by the early 1970s. In this sense it can be said that Japan had completed its nine decade long convergence to international competitiveness through industrialization by the early 1970s.

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There is little doubt that the social capacity to import and adapt foreign technology was vastly improved in the aftermath of the Pacific War. Creating social consensus with Land Reform and agricultural subsidies reduced political divisiveness, extending compulsory education and breaking up the *zaibatsu* had a positive impact. Fashioning the Ministry of International Trade and Industry (M.I.T.I.) that took responsibility for overseeing industrial policy is also viewed as facilitating Japan’s social capability. There is no doubt that M.I.T.I. drove down the cost of securing foreign technology. By intervening between Japanese firms and foreign companies, it acted as a single buyer of technology, playing off competing American and European enterprises in order to reduce the royalties Japanese concerns had to pay on technology licenses. By keeping domestic patent periods short, M.I.T.I. encouraged rapid diffusion of technology. And in some cases — the experience of International Business Machines (I.B.M.), enjoying a virtual monopoly in global mainframe computer markets during the 1950s and early 1960s, is a classical case — M.I.T.I. made it a condition of entry into the Japanese market (through the creation of a subsidiary Japan I.B.M. in the case of I.B.M.) that foreign companies share many of their technological secrets with potential Japanese competitors.

How important industrial policy was for Miracle Growth remains controversial, however. The view of Johnson (1982), who hails industrial policy as a pillar of the Japanese Development State (government promoting economic growth through state policies) has been criticized and revised by subsequent scholars. The book by Uriu (1996) is a case in point.

Internal labor markets, just-in-time inventory and quality control circles

Furthering the internalization of labor markets — the premium wages and long-term employment guarantees largely restricted to white collar workers were extended to blue collar workers with the legalization of unions and collective bargaining after 1945 — also raised the social capability of adapting foreign technology. Internalizing labor created a highly flexible labor force in post-1950 Japan. As a result, Japanese workers embraced many of the key ideas of Just-in-Time inventory control and Quality Control circles in assembly industries, learning how to do rapid machine setups as part and parcel of an effort to produce components “just-in-time” and without defect. Ironically, the concepts of just-in-time and quality control were originally developed in the United States, just-in-time methods being pioneered by supermarkets and quality control by efficiency experts like W. Edwards Deming. Yet it was in Japan that these concepts were relentlessly pursued to revolutionize assembly line industries during the 1950s and 1960s.

Ultimate causes of the Japanese economic “miracle”

Miracle Growth was the completion of a protracted historical process involving enhancing human capital, massive accumulation of physical capital including infrastructure and private manufacturing capacity, the importation and adaptation of foreign technology, and the creation of scale economies, which took decades and decades to realize. Dubbed a miracle, it is best seen as the reaping of a bountiful harvest whose seeds were painstakingly planted in the six decades between 1880 and 1938. In the course of the nine decades between the 1880s and 1970, Japan amassed and lost a sprawling empire, reorienting its trade and geopolitical stance through the twists and turns of history. While the ultimate sources of growth can be ferreted out through some form of statistical accounting, the specific way these sources were marshaled in practice is inseparable from the history of Japan itself and of the global environment within which it has realized its industrial destiny.

BA Hons. History VI Sem

History of Modern Japan (1868-1960)

Early Industrialization in Meiji Japan

This theme explores the beginning of the process of industrialization in early Meiji Japan. We start with investigating the existence of certain fundamental requisites of industrialization in later Tokugawa period namely, 1. A high level of production and circulation of commodities and division of labour, 2. accumulation of capital in the hands of the producers, 3. Existence of a large body of free labour. In doing so one has to compare the Japanese mercantilism with that of classical west. There was definitely the existence of these elements in Tokugawa Japan but in its own spatial and temporal specificities. Specific in the sense that while in west it was the merchant capital (especially bullion) which paved the way for industrialization but in Japan the banking capital predominated.

Initially foreign capital was also influential as a good amount of loan was procured from foreign companies. Later on Meiji government was able to arrange the capital on its own and no loans were taken. One interesting aspect of Japanese industrialization was that it was predominantly state sponsored. Also we need to understand that a unique feature of Japanese Industrialization referred to monopolistic and state control of strategic industries, strategic whether because of their connection with naval and military defense or because of their importance in export industries intended to compete against foreign products. The starting point of Japanese Industrialization was conditioned by military necessity. The policy of complete state control over industries changed with the promulgation of *Kojo Harai-Sage Gaisoku* (Regulation on the Transfer of Factories on November 5, 1880. From now onwards government started disposing of peripheral or less strategic industries by selling them into private hands.

Our focus while reading this theme must be on to understand why Japan was able to industrialize in nearly half a century while it happened over many centuries in Europe.

Key readings are:

E Herbert Norman, *Japan's Emergence as a Modern State* pp. 104-135.

Amit Bhattacharyya, *Transformation of Japan* pp. 116-137

KTS Sarao, *Modern History of Japan* pp. 31-64

In addition you can do a general of G. Allen, *A Short Economic History of Modern Japan* (1962) which is easily available on internet and a pdf copy of which I am also attaching with this document.