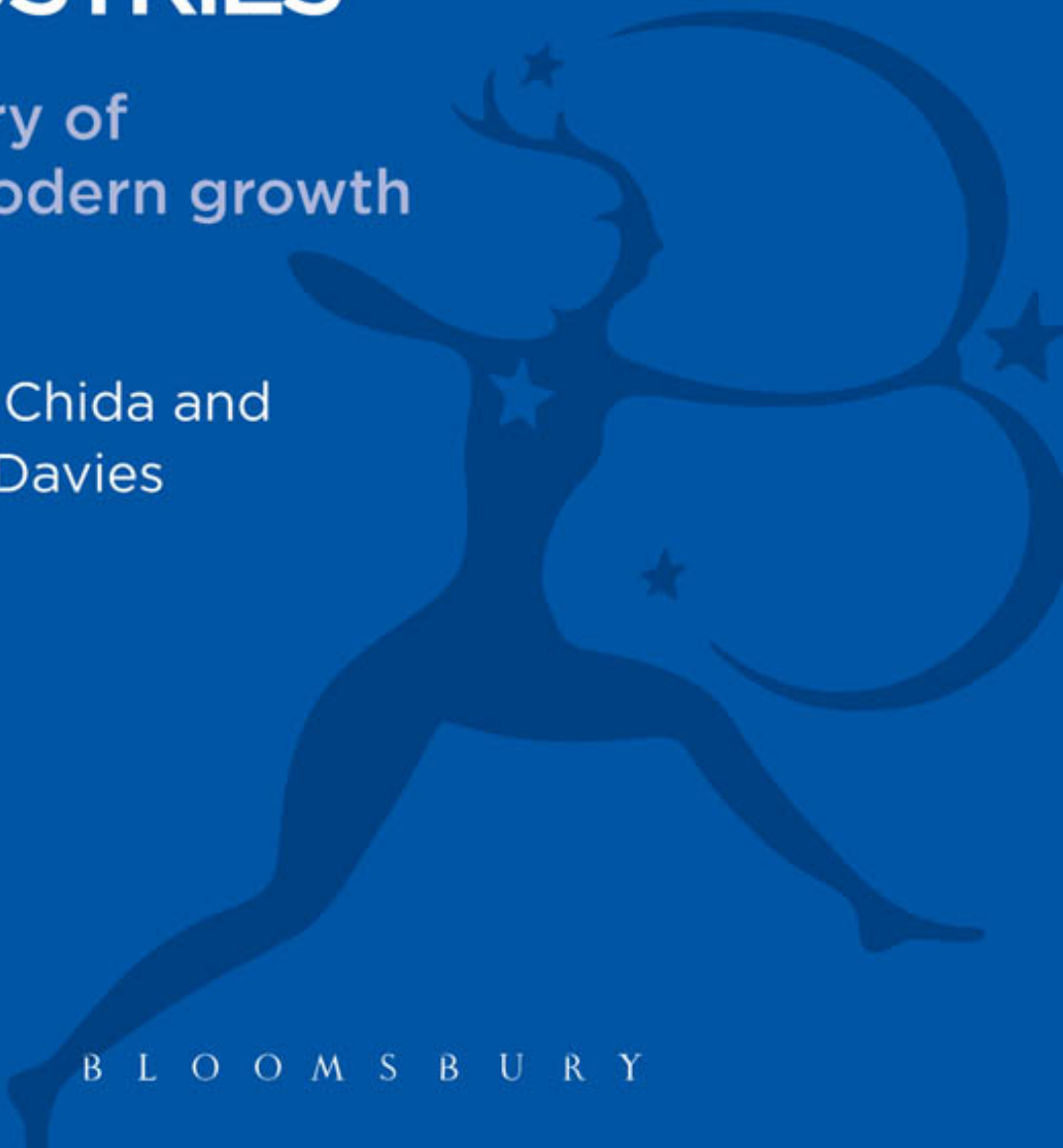
BLOOMSBURY
ACADEMIC COLLECTIONS
JAPANESE ECONOMICS
AND INDUSTRY

THE JAPANESE SHIPPING AND SHIPBUILDING INDUSTRIES

A history of their modern growth

Tomohei Chida and
Peter N. Davies



BLOOMSBURY

THE JAPANESE SHIPPING AND SHIPBUILDING INDUSTRIES

A history of their modern growth

This page intentionally left blank

THE JAPANESE SHIPPING AND SHIPBUILDING INDUSTRIES

A history of their modern growth

Tomohei Chida and
Peter N. Davies

BLOOMSBURY ACADEMIC COLLECTIONS
Japanese Economics and Industry

BLOOMSBURY
LONDON • NEW DELHI • NEW YORK • SYDNEY

Bloomsbury Academic
An imprint of Bloomsbury Publishing Plc

50 Bedford Square	1385 Broadway
London	New York
WC1B 3DP	10018
UK	USA

www.bloomsbury.com

First published in 1990
This edition published in 2012 by Bloomsbury Publishing plc

Bloomsbury Academic Collections
ISSN 2051-0012

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library.

ISBN: 9781780939186 (cloth)
ISBN: 9781780933252 (Bloomsbury Academic Collections: Japanese Economics and Industry)
ENTIRE COLLECTION ISBN: 9781780933184 (Bloomsbury Academic Collections: Economics, Politics and History of Japan)

Library of Congress Cataloging-in-Publication Data
A catalog record for this book is available from the Library of Congress.

Printed and Bound in Great Britain

Contents

Preface		ix
Introduction	The historical background and the early stages of change	1
1	The evolution and growth of modern shipping and shipbuilding industries (1890–1919)	14
2	The shipping and shipbuilding industries in the inter-war period	36
3	The aftermath of the Pacific War (1945–52)	57
4	The basis for expansion (1952–63)	97
5	The boom in the 1960s (1964–73)	137
6	Problems of expansion and contraction after 1974	175
Appendix		197
Notes		213
Select Bibliography		221
Index		225

This page intentionally left blank

The authors wish to dedicate this book to the late Mrs Riyo Chida and to Mrs Haruko Chida. They would also like to thank Mrs Maureen Davies for her unfailing hospitality at all times.

This page intentionally left blank

Preface

The transformation of the Japanese economy from something akin to that of a medieval European country to that of a superpower, third only to the United States and Soviet Russia, has staggered and amazed the rest of the world. It is not only the scale of the achievement but the fact that it occurred in such a short space of time that is so impressive. The 'black ships' (*Kurobune*) of Admiral Perry of the USA did not reach Japan until 1853 and it was not until the start of the Meiji Restoration in 1868 that the country was fully committed to a policy of modernization. In the hundred or so years that followed, Japan more than made up for its two centuries of isolation and was even able to take a disastrous war in its stride. In the process, its gross national product and the standard of living of a vastly enlarged population soared to previously undreamt-of heights.

Typical of this enormous progress has been the development of the Japanese shipbuilding and ship-operating industries. At the beginning of the modern period Japanese shipbuilders were capable of constructing only small wooden sailing vessels and these seldom ventured far from the homeland.

A conscious effort to encourage these allied industries then followed and Japanese vessels, at first foreign built, began to operate on ever wider routes from the 1870s. By the 1890s Japanese construction was beginning in earnest and by the outbreak of the First World War domestic production was equal to imports. The opportunities which then presented themselves were fully exploited but the industry suffered badly in the 1920s and relied heavily on naval orders during the 1930s. By 1941 the mercantile marine had risen to 6 million gross tons and output reached a peak of 1.7 million tons in 1944. But the devastation of ships, and to a lesser extent plant, was then massive and it was necessary for both to begin again, albeit on pre-existing foundations.

By 1956 Japan's production had recovered to such an extent that she replaced the UK as the largest shipbuilder, and thereafter the Japanese have dominated the world market, constructing an overwhelming proportion of total world tonnage each year. The size of their merchant fleet has also risen dramatically from the 1.71 million tons of 1950 to 38.1 million tons of 1975 – the comparable UK statistics being 17.9 million and 33.1 million tons.

Needless to say many explanations have been advanced to account for these impressive achievements. Most commentators come to the conclusion that the answer lies somewhere in the complicated relationship between Japanese society and its economic aspirations. To some Western eyes the social price which the Japanese have been forced to pay for their economic progress has been too high – certainly higher than that which they would have been prepared to pay themselves. The Japanese are well aware of these criticisms and are, indeed, frequently their own most vociferous critics. But for most Europeans and Americans the Japanese remain something of a mystery and they cannot mentally reconcile their traditional images of the *Fujiyama* and the 'tea ceremony' with the current massive imports of Japanese expertise and technology.

This book has resulted from the collaboration of a Japanese and a British scholar. Consequently it is hoped that it will avoid the pitfalls that are always present when attempting to present an aspect of one nation to another. As little has been written in English on this topic the study attempts to provide both the academic as well as the general reader with an introduction to what is an extensive segment of Japanese and world industry and trade. The aim is to see the progress of both the shipbuilding and ship-operation sections of the industry against the performance of other maritime nations and to seek to establish their strengths and weaknesses. The format is broadly chronological, but special attention is given to the role of the state, the availability of capital and technology, the character of labour and the activities of entrepreneurs and enterprises that have made particular contributions. These are considered to be the essential elements in the economic analysis of these particular industries. The study is written against the changing background of Japanese society and of its economy and concludes with a brief evaluation of the contemporary situation and a forecast of future trends.

This work could not have been completed without a great deal of assistance from many individuals, institutions and companies. The

authors specifically wish to acknowledge the aid provided by Mr H. Kikukawa, the Director, and his fellow librarians at the Japanese Maritime Research Institute of Tokyo for the data they provided forms the basis of the entire study.

Dr Davies would also like to pay tribute to the (British) Economic and Social Research Council and the University of Liverpool for their financial support of this project.

T. Chida, Aoyamo Lakuin University, Tokyo
P. N. Davies, University of Liverpool

This page intentionally left blank

Introduction: The historical background and the early stages of change

The aim of this study is to trace the development of the shipping and shipbuilding industries in Japan from the end of the Second World War to the present time. This necessarily requires at least some consideration of the particular characteristics of these key sectors of the economy and of how they have evolved during Japan's period of modernization. The termination of hostilities in 1945 saw both industries in a miserable condition but they were each to stage a rapid recovery in a very short period of time. Japan's shipbuilding industry, in fact, secured the top position in the world in only a decade, while Japan's ship-operating sector achieved supremacy in less than two decades. Thus in under twenty years both industries gained a status and a prosperity which they had never enjoyed previously.

It is generally believed in Japan that both industries had been completely devastated by the war and that little had survived to provide a basis for future expansion. This was certainly true of the mercantile marine, for few of its ships were still afloat and even fewer remained undamaged and seaworthy. Surprisingly, however, four-fifths of Japan's shipbuilding facilities were not damaged by the American attacks on the home islands, so this side of the industry was in relatively good physical shape to face the future. In addition both shipbuilding and ship-operators inherited many features from the pre-war era which were to provide vital foundations on which to build. This legacy consisted mainly of intangible assets such as managerial and technical know-how, a skilled workforce and goodwill. It also included the well-tried structures of these twin activities as well as their valuable linkages with domestic customers, the appropriate government agencies and with related companies and organizations.

The growth of modern Japan may be said to have commenced with

the Meiji Restoration (*Meiji Ishin*) in 1868 and in the following seventy years its shipping sector, like other areas of industry, evolved and consolidated into its own unique form and shape. A number of major firms and groups emerged to become part of this pattern, and as these were able to survive the trauma of the Second World War they were able to provide a significant degree of continuity. They were then to form an important ingredient in the legacy which was inherited in 1945 and it was only because of the existence of this substantial endowment that Japan's shipbuilders, and subsequently her ship-operators, were able to expand so rapidly once peace had been firmly established. Thus an essential part of this work is to investigate and clarify the process by which these industries came to assume their final pre-war shape. It is not intended, however, to describe their growth in any detail, but rather to analyse the salient factors which contributed to their evolution and helped to establish the organization which remained in being in 1945.

At the turn of the seventeenth century Japanese merchants were actively engaged in trade throughout the South-East Asian region. It is believed that they used wooden vessels of up to 700 tons which incorporated features of both the galley and the junk. Ocean journeys of this nature required quite sophisticated navigation techniques but it is not clear if these were developed by the Japanese themselves or whether foreigners, chiefly Spanish and Chinese, were usually employed for this purpose. In any event these voyages came to an end when, in 1636, the Japanese were instructed not to go abroad, and this restriction was confirmed three years later when the Tokugawa Shogunate further restricted the propagation of Christianity and thereafter adopted a policy of complete isolation.

The consequence of these decisions was that trade with foreign countries except Holland, China and Korea was forbidden and all Japanese ports except Nagasaki (in Kyushu) were closed to foreign vessels. In addition the construction of ships above 500 *koku* (50 tons) was prohibited in 1635. Thus Japanese shipping was confined to coastal routes and used only the small sized *wasen* (a traditional wooden vessel) for this purpose. As a result both the ship-operating and shipbuilding industries were placed in a situation where progress and enterprise were almost entirely stifled. There were, of course, some developments in the coastal trade and these included the appearance of common carriers and the evolution of liner services. By and large, however, both industries suffered badly from a lack of

innovation for there were no opportunities to acquire either managerial or technical experience of ocean-going operations or of the intricacies of large-sized ship construction.

The ending of the era of seclusion

This situation then persisted for over two centuries and was only altered when, in 1853, Commodore Perry and the United States Far Eastern Squadron under his command arrived at Uraga in Edo Bay – now known as Tokyo Bay. Perry's visit was in order to demand that Japan should open itself up to the vessels of foreign nations. The Americans were originally concerned with the development of ports that would facilitate their growing trade with China, but once the opportunities that were available in Japan became clear the removal of all barriers to commerce became their prime objective.

Perry's demand quickly instigated a political struggle within Japan. This was between those who thought that no concessions should be given to the 'foreign devil' and those who understood that it was not practical to oppose their proposals. The Tokugawa Shogunate, whose foundations had been shaky for some time, subsequently collapsed and was replaced in 1868 by a new government. These events have become known as the Meiji Restoration, for power was technically transferred back to the throne whose occupant was the seventeen-year-old Emperor Meiji and all decisions were thereafter made in his name.

Although the modernization of Japan may be said to date from this time, some preliminary progress had been made in the fifteen-year period of uncertainty which had followed the arrival of Commodore Perry. Japan had become much more aware of the outside world, for some of its citizens had visited the United States and Europe and an increasing number of foreigners were becoming residents on either a temporary or semi-permanent basis. Knowledge of the West's technical achievements and a desire to emulate them then led to the importation of many items, amongst which were a number of small ships. These were purchased principally by the shogunate and the provincial clans and were then operated, with the aid of skilled expatriates, on an experimental basis. These vessels demonstrated the beginnings of a policy which Japan has pursued ever since. By acquiring steamships in Britain the Japanese were, as the statistics clearly show, buying from what they regarded as the world leaders in their respective spheres.[1]

The need to provide facilities for the repair and maintenance of these vessels and to cater for the growing tonnage that was visiting the homeland then led to the establishment of a number of small shipyards.[2] With the technical assistance of foreign engineers these quickly gained the experience to undertake these tasks and then went on to construct a few small steamers. Since there were no effective steel producing or engineering industries in existence at that time these enterprises could not be cost effective and could not compete with foreign products.

This was the reason why some of their shipyards were then re-organized to produce a wider range of items which could provide the basis for diversification in the future. All provided a useful function in training Japanese nationals in new skills and some were to develop into major entities that were to survive to the present time. Thus the Nagasaki Zosenjo (Nagasaki Shipyard), whose construction was begun in 1857, was the predecessor of Mitsubishi Heavy Industries Ltd (MHI), while the Yokosuka Shipyard, established in 1864, was the forerunner of the Yokosuka Naval Shipyard which is still in being. Both of these concerns were organized by the shogunate but one notable exception, the Fujinagata Shipyard, had been set up as a private company in 1689. Its original task had been to construct traditional *wasen* but by the 1860s[3] it had also acquired the expertise to build coastal steamships.

Towards modernization

Thus by the beginning of the Meiji period the foundations for the establishment of modern shipbuilding and ship-operating industries had already been partly laid. These activities were, of course, almost entirely a result of the *ad hoc* decisions of a number of disparate authorities and individuals, and the prime motivation for the development of these facilities was that of defence. Further growth at an acceptable rate then required a comprehensive development programme and at this particular stage of Japan's economic evolution this impetus could only be provided by the state. The subsequent history of both industries owes much, therefore, to the government initiatives taken at this time, for these were to lead to an especially effective partnership between Japan's public and private sectors. A number of distinguished entrepreneurs then took full advantage of these circumstances and it was their dynamic approach that enabled the new system to firstly survive and then to prosper.

The motivation of the state

From its inception the new Meiji Government implemented a firm national policy – of *Shokusan Kogyo* (industrialization) or *Fukoku Kyohei* – which was designed to make Japan strong and rich. It was particularly determined to resist the dangers posed by potential foreign exploitation. An area of particularly high risk was seen to be in shipping, where the advanced technology of the West threatened to destroy what remained of the traditional domestic industry and prevent the process of modernization from coming to fruition. The authorities viewed with alarm the possibility that outsiders might take over Japan's coastal routes as well as its international outlets, for they were well aware of the consequences that similar actions had caused in other Asian countries. As a result it was decided to give a high priority to the establishment of viable ship-operating and shipbuilding concerns. This policy was also encouraged by an appreciation that possession of a modern mercantile marine would make a substantial contribution to Japan's foreign trade and balance of payments by reducing its dependence upon overseas carriers. The twin advantages of protecting the nation's essential interests and of reducing the drain on its foreign exchange thus ensured that the Meiji Government would take every opportunity to see that its shipping services were established on firm foundations.

It was relatively easy for coastal services to be set up, for the central government already possessed a number of small advanced vessels which had been imported from the West by the shogunate or the clans which had previously been responsible for the administration of many areas of Japan.[4] The real difficulty was the almost total lack of a suitable framework within which these routes could be organized and operated. Such a structure required the emergence of managerial skills, the training of staff, the development of a market, the passing of appropriate laws to regulate maritime affairs and the construction of the necessary physical facilities. These tasks were clearly beyond the capacity of the tiny group of entrepreneurs interested in ship-operating so were all, in some measure, undertaken or encouraged by the state. This public interest was to have an important impact on the way in which the Japanese ship-operating industry was to evolve.

As early as 1869 the Government declared its intention of enacting legislation to encourage and protect the private ownership and building of Western-style steamships.[5] This was introduced in 1870 with commercial consideration in mind, so as to be able to cope with the

threat from superior foreign vessels even on coastal routes, but military factors were also regarded as important. In the same year the Kaiso Kaisha was established to operate coastal routes around Japan. The firm was largely funded by Mitsui Gumi (the predecessor of the present Mitsui Bussan) and attempted to provide a liner service between Tokyo and Osaka, using government-owned vessels under the supervision of state officials. As this was the first Japanese steamship company its staff were naturally inexperienced and it did not prove viable. After only one year, therefore, it was taken over by the Kaiso Toriatsukaisho Jo. In 1872 the business was taken over by the newly established Nippon-koku Yubin Jokisen Kaisha. Although this company was able to purchase the ships it required from the Government on advantageous terms, its services proved to be unprofitable and it was dissolved in 1875.

The difficulties experienced by this company and its predecessors can easily be understood. Its vessels were uneconomical, its seamen and engineers were unskilled and its management was poor. These weaknesses, in what was basically a state-operated firm, which showed themselves in the face of competition from foreign and domestic companies led to considerable debate; the coastal routes, and eventually the international services, were soon being organized by private rather than public enterprise. The prime mover in this development was Yataro Iwasaki, the founder of the Mitsubishi Zaibatsu, who came from a lower grade samurai (warrior) family of the Tosa clan. Iwasaki was an entrepreneur who was determined to take full advantage of the political and economic changes which occurred at the time of the Meiji Restoration. One of his many initiatives was to operate the clan's vessels, and in 1870 he used these to venture into the coastal trades. Then, in spite of a number of setbacks, he purchased the steam vessels he had been operating, at dirt-cheap prices, and in 1873 he established the Mitsubishi Shokai. The name of this enterprise was changed to the Yubin Kisen Mitsubishi Kaisha in 1875 and it was subsequently to form a major constituent in the Nippon Yusen Kaisha when Japan's leading shipping company was formed ten years later.

The appearance of the shasen

While engaged in coastal shipping the Mitsubishi Shokai was strengthened by an unexpected bonus. The Japanese Government had planned a military expedition to Formosa in 1874 on the basis that their troops would be carried in chartered, foreign vessels. When this proposal was

vetoed by the principal powers it was decided to use Japanese tonnage and, in the absence of suitable domestic vessels, thirteen steamships were purchased from abroad. These were entrusted to Mitsubishi who managed them for the length of the campaign. Then, when it had been successfully concluded, the Government showed its gratitude by allowing Mitsubishi to retain the ships at a purely nominal fee. This generosity might not have been without reason. It is thought that the Government appreciated that at this stage of Japan's economic development one strong line was preferable to a number of weak ones and so it gave all of its support to what it regarded as the most promising firm. As part of this arrangement the Government then instructed Mitsubishi to employ these vessels on what was to become Japan's first ocean-going liner service between Yokohama and Shanghai. This *Meirei Koro* (Ordered and Subsidized Liner Route) began to operate in February 1875, and it quickly brought Mitsubishi into conflict with the (American) Pacific Mail Steamship Company. This struggle was only ended when Mitsubishi (with the aid of the state) was able to purchase the ships and shore facilities which their rivals had utilized in this service.

In May of the same year the Japanese Government made a positive decision which was to have a fundamental impact on the future of its shipping business. This policy, which was one of the three possibilities, laid down that shipping enterprises should be owned and operated privately with, if necessary, the supervision and protection of the state. In accordance with this policy an instruction was issued to Mitsubishi in September 1875, which was named the 'First Order' and which had the effect of transferring the balance of publicly owned ships to the private sector. As the company, now re-constituted as the Yubin Kisen Mitsubishi Kaisha, was the only firm capable of operating this tonnage in a viable manner it received virtually the entire fleet and was then left in possession of a total of about forty vessels, most of which were steamships. In addition Mitsubishi received an operating subsidy for each of these ships when they were employed on the 'ordered' routes, and secured further payments which were to be used for the training of seamen. In due course the seamen's training school established by Mitsubishi at this time was later to become a full-scale nautical college which was financed and organized by the state.

Mitsubishi's growing strength enabled it to eliminate the competition provided by firms operating (mainly) sailing vessels in the coastal liner trades, and was the final straw in the demise of the Nippon-koku Yubin

Jokisen Kaisha. Then, after its victory over the Pacific Mail Steamship Company, it successfully fought off an attempt by the (British) Peninsular and Oriental Steam Navigation Company to secure a footing in the trade from Shanghai to Yokohama. This involved a six months' freight war before the P & O was prepared to withdraw from the route and thus leave Mitsubishi with a monopoly of this business.

In 1877 the outbreak of the Satsuma Rebellion provided Japanese shipping with an impetus to speed up its development. The inadequacies of the traditional *wasen* had been highlighted when many had been damaged or sunk during a severe storm which affected the Kansai district in 1870. Another great storm, which lasted for over seventy-five days, occurred in 1877 and many *wasen* engaged in war service as well as those operating on their normal routes were forced to take refuge in convenient ports. This situation necessarily caused considerable difficulty for the transportation of war supplies and thus provided a further argument in favour of the modernization of the Japanese mercantile marine.[6] The revolt also gave Mitsubishi a further opportunity to strengthen its relationships with the state. With the exception of those vessels employed on the Shanghai run, all of its tonnage was placed at the disposal of the Government and, by carrying troops and war supplies, played an important role in the suppression of this potentially disastrous civil revolt. The excellent links which these activities confirmed can be judged by the high level of support which Mitsubishi received to aid its commercial diversification once peace had been restored. This enabled the enterprise to advance into the fields of foreign exchange, finance, warehousing and insurance, initially with the aim of promoting its shipping, and by so doing effectively paved the way for the development of the Mitsubishi Zaitbatsu. This was helpful in the successful competition with the P & O.

The monopoly achieved by Mitsubishi in the coastal liner trades led to considerable public criticism. It was felt that the company was taking unfair advantage of its position and was not acting in the way that the Government had anticipated when it had been given its privileges under the First Order. This criticism, combined with political pressure, then led to a reconsideration of the situation, and in 1882 the 'Third Order' instructed Mitsubishi not to extend its activities outside its shipping business. At the same time, the Government provided about half the capital to set up a new company, the Kyodo Unyu Kaisha. This line, based on a number of existing firms, then provided direct competition with Mitsubishi on all its domestic routes and, as a consequence, both

suffered heavy losses. This situation could not be allowed to continue, so after several abortive attempts at co-operation had been abandoned the Government urged the two companies to amalgamate. This was achieved in 1885 and resulted in the formation of the Nippon Yusen Kaisha (NYK) as the sole state-aided shipping firm.

In order to encourage this merger the Government agreed to guarantee an 8 per cent annual dividend on its capital for fifteen years. In return it was arranged that the NYK's vessels would be used to provide fourteen specified services. These 'ordered routes' were mainly around Japan but also included near-sea services to China, Korea and Asiatic Russia. When it was first formed NYK was a semi-official organization and it was not until 1893 that it became an entirely private enterprise. It should also be noted that it was only Mitsubishi Kaisha's liner services that were included in the amalgamation and that it continued in the maritime field with an independent existence as a shipbuilder and as an operator of *shagaisen* (non-scheduled) vessels.

While the NYK was thus developing into Japan's major ship operator other firms were also being attracted into the shipping industry. The growth of the economy and of trade was such that an increasing demand for transport facilities provided many fresh opportunities. These were particularly important in the Kansai District (the western part of Japan) where many small companies were engaged on the coastal routes, employing second-hand steamships which they had purchased from foreign firms formerly engaged on routes around Japan. Such firms increased significantly in number during the Satsuma Rebellion and they included traditional and new ship-operators. The nature of this business was such that excessive competition developed and this became especially keen in the Setonaikai District. After several unsuccessful attempts to restrain this rivalry the Government concluded that an amalgamation was again the only solution. Following its recommendation, a general manager of the Sumitomo Zaibatsu who represented the business community of the Kansai District acted as the principal promoter of what was to become Japan's second *shashen* (or regular) line. Under his guidance fifty-five small firms agreed to join together in 1882 and the Osaka Shosen Kaisha (OSK) came into existence two years later.

As the OSK was at first only engaged in the coastal trades with small-scale wooden steamships it was no rival to the NYK. In the course of time, however, the OSK was able to conclude a pooling agreement with its competitors and, in 1887, some of its services were designated as

'ordered liner (coastal) routes'. With the aid of a state subsidy the company was then able to acquire a number of steel steamships, and in 1890 its activities were extended to Korea to form its first ocean-going service. This was to mark the beginning of the OSK's role as a *shasen* line and after a series of acts in 1896 a third firm was created to join this exclusive group operating on scheduled routes. With the passing of the *Zosen Shorei Ho* (Shipbuilding Promotion Law), the *Kokai-Shorei Ho* (Navigation Promotion Law) and the *Tokutei Koro Josei* (Specific Route Subsidy) the Government began actively to promote the use of steamships to extend Japan's overseas services. With this encouragement, Asano, a prominent businessman with experience as a *shagaisen* operator on coastal routes decided to venture into ocean-going shipping and established the Toyo Kisen. The line quickly launched a series of regular services with ships acquired from Britain, and with the aid of various subsidies plus strong financial support from Zenjiro Yasuda, the founder of the Yasuda Zaibatsu, was able to make steady progress until the Depression which followed the First World War.

The development of the shagaisen

While the *shasen* lines, with Government assistance, were consolidating their position in the coastal trades and were using the experience gained from this activity to advance into ocean-going liner services, other ship-owners were also making some progress. These faced many problems as they were confronted with competition in their field of activity on coastal routes from foreign firms as well as from the *shasen* – especially Mitsubishi Kaisha. One solution was to introduce a more advanced technology, but both traditional as well as new firms were reluctant to switch to steamships from the traditional *wasen* and, for a time, continued to rely upon sailing ships. This was partly because of the high capital cost and running expenses of steamships as well as the relative lack of the necessary skills to operate them. But the real reason was that at this time there was insufficient cargo capable of paying the appropriate freight rates to sustain unsubsidized powered vessels.[7] The gradual economic growth of Japan led to a steady transformation of this situation so that when the Satsuma Rebellion broke out many of the firms had switched to Western-style sailing vessels. This process was accelerated by the Government decision made in 1885 to prohibit the construction of large-scale *wasen*, and three years later, only twenty years after the Meiji Restoration, virtually all of this tonnage had been

replaced by steamships. A major factor in this dramatic change was the high profit which could be earned from coastal shipping and merchant activity during this period of expansion, for this enabled capital formation to proceed at a rapid rate.

These shipowners were, of course competitors of the *shasen* lines, so were initially known as the *hantaisen* (opposition ships). By the 1890s, however, when their vessels were largely driven by steam and their tramp services were extending beyond the confines of Japan they came to be called the *shagaisen* (literally 'outsiders'). Amongst these firms Mitsui Bussan (MBK), which had been established as a trading merchant in 1876, was specifically known as the *jogaisen* (exceptional ships) because of its unique position in the industry. Mitsui Bussan had been exporting coal to China since 1876 with exclusive sale rights of coal obtained from the Government. In 1878 they entered into ocean-going shipping as a merchant carrier with a sailing vessel they obtained from the Government, a steamship purchased from Britain and another ship chartered from overseas. Thereafter progress had been extremely quick and by 1890 MBK had fully established itself as a substantial ocean-going operator utilizing the vessels of other *shagaisen* owners and foreign firms to supplement its own tonnage. It was also a large charterer of *shagaisen* vessels which it subsequently hired out to both the *shasen* lines and foreign firms. These developments meant that by the beginning of the 1890s the basic structure of the Japanese shipping industry, based on the *shasen* and *shagaisen*, was virtually complete.

The foundation of the shipbuilding industry

The steamship-building and repair yards established by the shogunate and the clans were inherited by the new Government at the time of the Meiji Restoration.[8] From then on, in line with the national policy of concentrating on defence and the industrialization of the economy, priority was given to the encouragement of both the ship-operating and shipbuilding industries. Of the two, development of the operating side was given preference because of the urgency dictated by military and economic necessity and owing to the relative ease with which the tools of the trade could be imported and employed. The shipbuilding side took much longer to evolve because of the huge financial and technological requirements and because Japan lacked the supporting industries, especially steel and engineering, that were essential for viable production. Thus the steamships that were imported were repaired and

maintained in principally naval yards, for it was not until 1899 that private facilities were fully equipped to cater for repairing the larger-sized vessels.[9]

From about 1880 the inefficiency of government-owned firms became a controversial public issue and there were many demands that they should be transferred into private hands. This situation should be considered against the economic background which was ruling in Japan at that time. As this belief gained ground it spread to include the state-owned shipping facilities, so in 1884 the Nagasaki Shipyard was loaned to Mitsubishi Kaisha and two years later the Hyogo Shipyard was loaned to Kawasaki Shozo. Then, in 1887, these two establishments were sold at moderate prices to their respective lessors and formed the basis of the present Mitsubishi Heavy Industries (MHI) and of Kawasaki Jukikai Kogyo. These events marked the beginning of a new epoch, for they implied a shift in the state's policy whereby the emphasis moved from support of what were naval to what became private shipyards. Since then these two ship constructors, particularly MHI have become the greatest beneficiary of the Government's subsidies – a major reason for MHI developing into Japan's leading shipbuilding company. In return, the scale of MHI's activities ensured that it could employ the latest technology and for many years it was the only concern that could satisfy the demands for larger ships of high quality.

The change in the Government's shipbuilding policy proved to be a successful one partly because of the increasingly favourable economic environment. The growth of Japanese industry and trade led to a rise in demand for the larger types of metal-hulled vessels and the now-privatized yards embarked on a programme of building iron ships. Only about twenty of these had been completed, however, when advances in technology led to a change in the building material, and from about 1890 iron was rapidly replaced by steel. By then the transfer of technology from overseas was virtually complete: all foreign experts had already been repatriated and their positions filled by Japanese nationals, many of who had been trained abroad.[10]

The study of ship construction (wooden vessels in France and iron and steel ships in Britain), thus meant that the Japanese industry was quickly able to overcome much of its early ignorance, and the transfers from the state meant that capital accumulation was greatly enhanced. Private firms therefore became large enough to organize substantial enterprises, and by the turn of the century the shipbuilders were amongst the largest firms in Japan. However, it should be noted that

even by this period the shipbuilding industry remained almost entirely dependent upon imported plate, and this situation was to change only slowly over the next three decades.

Prior to 1887 when the facilities at Nagasaki and Hyogo were sold to Mitsubishi and Kawasaki respectively, a number of other shipyards had already been established which were to play important roles in the development of the industry. Of these the three most notable were Ishikawajima Hirano (predecessor of the present IHI) which was Japan's first full-scale private concern established in 1876; the Osaka Tekkojo which had been founded by an Englishman named Hunter in Osaka during 1881 and which was to form the basis of the present Hitachi Zosen; and the Hakodate Zosenjo which was established in Hokkaido during 1883 and which is currently known as the Hakodate Dock Company. All of these firms were set up to cope with the increasing demands for new building, repairs and maintenance caused by the Formosan Expedition, the Satsuma Rebellion and the development of the *shasen* operators.

At first all of these yards operated on a very small scale and it took some time before they were able to overcome their initial difficulties. Even by 1890, when there were eleven major private shipbuilders, their size remained relatively moderate and their total workforce was less than that of the Yokosuka Naval Shipyard.[11] This fact indicates the central importance placed by these naval facilities, but even their capacities were very limited and the larger-sized warships still had to be imported. It was not until 1910 that Japan was capable of supplying all of her requirements for naval vessels.