Bayer and Hoechst, dedicated part of their activities to the manufacture of pharmaceuticals. This renders the delimitation of the market particularly complicated since it meant a high degree of potential competition due to the technical capacity and the financial power of these very large chemical firms. Bayer's total turnover in 1913, for instance, was about six times as high as Merck's, and Hoechst employed in 1913 more than five times as many workers and staff—10360 to be exact—as Merck.[23]

The Darmstadt firm was an extremely active exporter. In 1900–1 only 23 per cent of its sales went to Germany, 49 per cent to other European countries and 28 per cent to the rest of the world. Germany's share in Merck's sales gradually rose, and by 1912 had reached 33 per cent, while Europe took 43 per cent and the rest of the world 24 per cent.[24] The most important foreign markets in 1900–1 were Russia (17.6 per cent of total sales), followed by Latin America (11.4 per cent) and New York which evidently served the US market (11 per cent). Then came Britain (5.5 per cent), Austria-Hungary (5.3 per cent), Spain and Portugal (5.1 per cent), and Italy (4 per cent). These proportions did not change dramatically until 1912. The growth in importance of the German market was accompanied by a shrinking quota of exports to Russia (12 per cent in 1912) and to the United States and Canada (7.5 per cent in 1912).

This latter trend was probably caused by an internal factor. George Merck, a member of the Darmstadt family, had emigrated to the US, where in 1887 he founded a sales affiliate in New York. A contract concluded in 1890 between George Merck and the Merck firm of Darmstadt shows that the former received $200000 which constituted his entire participation in a partnership he was establishing together with a certain Theodor Weicker of New York, probably another German emigrant. In 1894 the Darmstadt firm gave another $50000 and, in return, George Merck had to deliver his entire profit share to the parent company.[25] In 1899 the firm of Merck & Co was founded, and started production of pharmaceuticals in Rahway, NY. When in 1917 it was taken into custody under the Trading with the Enemy Act, its capital amounted to $1 million. During the last years before the War it had built up an integrated production which no longer depended exclusively on the imports of German intermediates.[26] The relatively high American import duties on pharmaceuticals, and the fast growth as well as the dimension of the American market must have been the principal reasons for this direct investment in manufacturing.[27] A further motive might have been supplied by the particular structure of American demand where the ordinary drugstores selling pharmaceuticals were not supervised by scientifically trained pharmacists which meant that preference was given to ready-made and packed drugs.[28] The diminishing exports of Merck to the United States were thus probably a consequence of direct investment by the same firm.

If we follow Merck through particular foreign markets, Italy and France

might serve as good examples of attempts to increase gradually the degree of internalisation. The Italian market was never a principal one for Merck, but it grew slowly from 1899–1900, when its share in total sales amounted to 3 per cent, until 1912, when it reached 4.3 per cent. Merck had established a number of small sale agencies all over the peninsula (in Genoa, Florence, Rome, Livorno, Naples, Palermo and Catania) whilst Milan was the main bridgehead for the conquest of the Italian market. Around 1900—the exact date could not be determined—the Milan agency was enlarged by the addition of a depot, and from then on the Italian customers were increasingly being served from there. Whereas in 1900–1, 87 per cent of Merck's exports to Italy were delivered directly by the Darmstadt factory, in 1913 this proportion had diminished to a mere 34 per cent.[29] Clients increasingly preferred being served from the Milan depot because it released them from the nuisance of getting their orders through the complicated formalities of the Italian customs service.[30] Discussions took place on bottling and packing in the Milan depot the products for which there was greatest demand, thereby economising on freight and customs duties. This was finally realised in 1910, and Milan served as example for a corresponding initiative in London in the following year. The entire size of the Milan affiliate remained rather limited. The deposit and its packing and bottling department employed only eight persons; all machines came from Germany; the commercial staff of the agency consisted of seven 'gentlemen', three of them Germans who occupied the leading positions.[31]

In France, where the same problems of passing goods through customs existed, a depot had already been set up in Paris in 1902.[32] A limited joint venture with a Paris firm (Bousquet) was started. Merck authorised its French partner to use its brand names for certain so-called 'specialities' which were then bottled and packed in France, a measure certainly provoked by the French prohibition against the import of pharmaceuticals in tablet or capsule form.[33] Moreover, the French patent law of 1844 did not allow the patenting of any type of medicine. This certainly did not favour the growth of a vigorous national industry and, as a result, according to contemporary sources, shortly before the outbreak of World War I 90 per cent of the fine chemicals needed for French pharmaceutical production came from Germany or passed through French affiliates of German industry.[34]

The problem of establishing a direct manufacturing investment in France was pondered over and over again by Merck, especially as the joint venture with Bousquet did not prosper as planned. Furthermore, the existing tariff was, if one is to believe the Merck officials, continuously changed whenever a new French 'infant' pharmaceutical competitor entered the scene.[35] Finally, in 1910, a small chemical factory at Montereau near Paris was bought and, after considerable investment exceeding all previous

calculations, production of some pharmaceutical chemicals, such as glycerophosphate and theobromine, started two years later. The initial difficulties were immense, and in the spring of 1913 Merck almost decided to give up the Montereau plant. Up to that point 574000 marks had been invested and over the same period a total loss of 128000 marks had accumulated, including depreciation. Nevertheless, prestige considerations encouraged Merck to keep the Montereau factory open, although the outbreak of World War I prevented its capacity to survive being clearly demonstrated. When the works were seized by the French authorities in 1914, their value was calculated at 671000 marks (839000 francs).[36]

The already mentioned structure of Merck's exports reflects fairly well the overall export figure of the German pharmaceutical industry, which in 1913 held a dominant 30.3 per cent share of world exports, followed by Britain (21.3 per cent), the USA (13 per cent) and France (11.9 per cent). 21.4 per cent of these German exports went to Russia, 13.7 per cent to Austria-Hungary, 11.3 per cent to Britain, 10.7 per cent to the USA, 4.8 per cent to Italy, and 3.4 per cent to France.[37] Russia, the principal export market, was a notoriously high-tariff country, and Merck considered direct investment there as almost inevitable in the long run. However, the German firm preferred to establish only a bottling and packing department at its Moscow agency in 1906,[38] and when war broke out, it had not yet started manufacturing. Schering of Berlin, one of its major competitors, did, on the other hand, take this step and established in 1905 a pharmaceutical factory in Moscow which imported the chemical raw materials and intermediates from Germany. In addition, a charcoal plant using the immense resources of Russian timber was built at Wydriza in the Mogilev province.[39]

Another typical example of a producer of a consumer good is the case of Kathreiner's Malzkaffee-Fabriken, founded in 1892 in order to produce malt coffee, a substitute made from barley with odorous substances added to give it at least a certain coffee flavour.[40] It was a typical low-income product but, with the help of intensive publicity, the firm tried to persuade the public that its malt coffee, being free of caffeine, was also an extremely 'healthy' product and not only a second-best solution. Special emphasis was laid on the diffusion of the brand name and, particularly in the US, marketing efforts were directed at German immigrants.[41]

Up to 1914, the company had built seven factories in Germany. Sales increased from 17718 quintals in 1891–2 to 57812 quintals in 1901–2 and to 496582 in 1913–14, doubtless pushed up after 1910 by the rapid rise in the price of coffee. In 1914 the firm was established in nine different foreign countries. It had given licences to a French, a Swiss, and a US firm, whereas it had undertaken direct investment in manufacturing companies in Austria-Hungary, Sweden, Russia, and, in 1912, in Spain after a sevenfold increase there in customs duties on malt coffee. The tariff

situation in Argentina, where sales developed in a very satisfactory way, suggested a similar move but this was then prevented by the outbreak of the First World War. The Belgian and Dutch markets were supplied by a Rotterdam sales affiliate, and in Italy a sales depot was established in 1893 in Milan. One year later, a manufacturing company was created together with Italian partners in Genoa but it had to be closed down very soon afterwards because of internal differences with the Italian co-entrepreneurs and because of a newly established tax on production. There was probably also a misapprehension as to the taste of the Italian consumer who seemingly preferred if not 'real' coffee, at least the substitutes made from chicory with their stronger flavour. Kathreiner's Italian sales showed, in any case, a very slow development between 1900 and 1914.

Both cases of consumer goods producers examined here illustrate in detail the process and different modes of internalisation. Moreover, the Italian experience of Kathreiner's suggests that it was not a one-way process. In certain circumstances plans had to be rapidly revised, which meant that the dynamics were not limited to expansion only. Finally, the example of Merck shows that it was not necessarily the large oligopolistic firm which went for direct investment.[42] Particularly in the early phases of development of a specific market, ownership advantages were to be found also with smaller companies and could, if the market subsequently became more differentiated, as was certainly the case with the pharmaceutical industry, eventually be maintained.

Multinationalisation and the Transfer of Technology: Bosch and Mannesmann

In the middle of 1914, the Stuttgart firm of Robert Bosch employed 4726 workers and staff. Its production consisted almost entirely of magneto ignitions for automobiles and, to a much lesser degree, for aeroplanes. Shortly before the war a diversification into other electrical equipment for the car industry, such as starters and headlights, was undertaken. In the first half of 1914 Bosch had agencies and factories in 25 countries and 88 per cent of its production was exported.[43] The firm had grown out of a small mechanical and electrotechnical workshop founded by Robert Bosch in Stuttgart in 1886. Its growth gained in momentum when Bosch started to produce magneto ignitions for automobiles in 1898. In 1901 his firm employed a work-force of 45, but thereafter it expanded very rapidly in parallel with the rapid growth of the car industry, to 506 employees in 1906 and to more than 4000 in 1914.[44] Bosch, a self-made man who never gave up control of his company during his lifetime, founded in 1899 the 'Automatic Magneto Electric Ignition Company Ltd', which was made responsible for sales in France and Belgium and later changed its name to

Compagnie des Magnétos Simms-Bosch. His British partner Frederic R. Simms represented the Stuttgart firm in Britain[45] but sold his share in the French affiliate to Bosch in 1906.[46] The fact that in 1908 the French firm changed its name to Société des Magnétos Bosch reflected the new ownership situation. In 1907 it started to produce magneto ignitions for trucks since subsidies given by the French state to producers of these vehicles depended on the condition that all parts had to be French made.[47] The French automobile industry, the most important in pre-1914 Europe, was an extremely important customer, and it seems that Bosch had 'un quasi monopole sur le marché français' with annual sales that amounted to 10 million francs just before the outbreak of the war.[48] In Britain Bosch separated from Simms in 1907 and founded a new affiliate in London called The Bosch Magneto Company Ltd.[49] When it was required that racing cars and all their components had to be made in Britain if they wanted to participate in certain events, production, which seems, however, to have been largely assembly, was started in London. During the first half of 1914 Bosch satisfied approximately 85 to 95 per cent of British demand for magnetos and spark plugs.[50]

When the collaboration with Simms, who was also a general agent for the US came to an end in 1906, Bosch immediately founded an American affiliate in New York.[51] Soon agencies in Chicago (1908), San Francisco (1909), and Detroit (1910) followed.[52] The US market was of the greatest importance but exports suffered from the cost of freight and especially from a tariff which in the case of magnetos amounted to not less than 45 per cent of their value.[53] There were certainly enough ownership advantages due to the firm's technology to induce Bosch to start direct investment in manufacturing. Consequently, in 1910 construction of a magneto factory was undertaken in Springfield, Massachussets.

Production started in 1912. Two years later, the plant employed 2000 workers and staff and was considered a 'model factory' by American observers.[54] The US Alien Property Custodian who seized the American Bosch properties in 1918 gave an impressive report on the company's achievements.[55]

> The Bosch Magneto Co. was a tremendously powerful organization. Its combined capital and surplus exceeded $6,500,000. It owned and operated a modern factory at Springfield, Mass., with branches at Detroit, Chicago, and San Francisco. Its main office and sales department was in New York City, but it had agencies and supply depots in over one hundred American cities. Its product had obtained first place in the minds of the American purchasing public and was indeed regarded as the standard with which all other similar products were compared.

In 1912 Bosch acquired 45 per cent of the equity capital of the Eisemann Magneto Company, an American affiliate of its principal German competitor. In the same year, there followed the purchase of the Boonton Rubber Manufacturing Company of Boonton, NY, 'the largest producer of molded insulation, a product which was essential to the magneto industry. Again, in May 1914, it acquired outright, at a price of $750,000 in cash, the plant, business and goodwill of ... the Rushmore Dynamo Works at Plainfield, N.J. ... This factory was shortly thereafter shut down and dismantled.'[56] This latter fact speaks for itself and indicates clearly an oligopolistic market structure; as a matter of fact, according to the Alien Property Custodian, Bosch and Eisemann together produced 'at least half' of all the magnetos sold in the USA before war broke out in Europe.[57]

Turning now to Mannesmann, the company showed great technological originality, but for almost two decades its growth was much more hesitant and never led to a dominant position in its sector. Based on the highly original invention, patented in 1886, for producing seamless rolled tubes, the firm seemed to become a MNE right from the outset.[58] In practice however, in addition to the original plant owned by the two inventors Reinhard and Max Mannesmann, between 1887 and 1889 three other companies were created, each of them formally independent: one at Bous near Saarbrücken, one at Komotau in the then Austro-Hungarian Bohemia and one in Britain, where the Siemens family had an interest and took a licence for a plant which was to be installed at Llandore. The German and Austrian works were amalgamated in 1890 as the Deutsch-Österreichische Mannesmannröhren-Werke, with a capital of 35 million marks and under the financial guidance of the Deutsche Bank, the two inventor brothers receiving half of the new shares for bringing in their patents. Since the tube rolling process was at the beginning scarcely ripe for continuous production, the first years of the new firm were overshadowed by considerable technical and, consequently, financial difficulties. The two Mannesmann brothers left the firm quite soon and sold out their shares in 1900, the Deutsche Bank becoming the uncontested 'entrepreneur' and financier of the company. No dividend could be distributed until 1906; by then several rationalisation measures and the generally favourable economic climate guaranteed solid further growth.

Around the turn of the century the process of multinationalisation was resumed. In 1899 the Landore Mannesmann Tube Company, which otherwise would have had to be closed down and which was completely independent from the German firm, was taken over. This move into direct investment was motivated by the attempt to get control of the British market for seamless tubes. Moreover, being based in Britain, Landore was able to profit from Empire preferences which were increasingly built up by the dominions.[59] As a 'national' firm Landore became also one of the main

suppliers of boiler pipes for the British navy. In 1913 the construction of a second and larger rolling mill at Newport near Cardiff was decided, its future production intended as a replacement for imports from the German parent firm, notably large-diameter tubes so far not produced in Britain. The Newport works had not yet gone into operation when the war broke out.[60]

In 1906, when, as we have seen, the Mannesmann firm started to distribute its profits, the establishment of a rolling mill in Italy was decided; up to that moment, the peninsula had been an export market of growing significance.[61] The investment was made not so much because of the Italian tariff, but in the hope that it could profit from State orders for the railways, the navy or for the new programme of municipal aqueducts in southern Italy. In practice, State orders went increasingly to national businesses even if its tenders were up to 5 per cent higher than the average tender from abroad. Accordingly a company was founded under Italian law and with an Italian metallurgical firm as a minority partner. The works were built at Dalmine near Bergamo where two electric furnaces were also installed in order to be able to produce the special type of steel needed for rolling seamless tubes. Production started in 1909 but the technical difficulties were considerable, and after two rather unsuccessful years the Italian partner withdrew its participation. A real improvement as far as output and profitability were concerned came only in 1912. Still, technically and financially the Società Tubi Mannesmann depended entirely on the parent company at Düsseldorf. As an example, the parent company waived its right to the licence fees fixed by contract in order to 'improve' the balance sheet of the Italian affiliate. Credit lines opened by Italian banks were used only at the end of 1913; up to that point all financial means were provided from Germany. When Italy entered the war in May 1915, the firm was seized. Nevertheless, Mannesmann succeeded in selling the Dalmine works in 1916 to a group of Italian banks, a transaction made with the agreement of the Italian government via neutral Switzerland.[62]

The most important foreign asset of Mannesmann remained, however, the Austrian affiliate, 'which reached about one third of the Mannesmann combine's total turnover in the last pre-war year' when all non-German subsidiaries accounted for 45 per cent of the overall volume.[63] The Komotau works certainly profited from high Austro-Hungarian tariffs and soon succeeded in attaining a share of 35 per cent in the tube cartel of the country.[64]

In brief, one could say that both firms, Bosch and Mannesmann possessed strong ownership advantages through their patented technology. Foreign direct investment in manufacturing was, however, only induced when additional country-specific factors such as tariffs or non-tariff trade measures became effective in the particular foreign country. In the case of Bosch, its nearness to important customers such as the French and the American automobile industry certainly also played an important role.

Patent Legislation, Tariffs and Multinationalisation: the Case of the German Chemical Industry

The dominant position of the German chemical industry up to World War I is common knowledge among economic historians. If one excludes petroleum refining, which was particularly important in the US chemical sector, the German chemical industry retained a clear lead in world chemical production. Its exports 'accounted for an estimated 28 per cent of world exports in chemicals'.[65] The German superiority in the artifical dyestuffs sector was crushing. The total value produced by eight firms and their foreign subsidiaries in 1913 amounted to 75–80 per cent of world production, and some 85 per cent of German production was exported.[66] It is commonly accepted that the rapid rise of the German chemical industry which started in the 1860s was due to country-specific advantages like the German university system which favoured the training of chemists and chemical engineers. There were industry-specific advantages like the oligopolistic market structure and the access to fuel and raw materials. In some sectors enterprise-specific advantages shrank after 1900 and in the dyestuffs sector this resulted in the formation of two *Interessengemeinschaften*, the so-called Dreibund (BASF, Bayer and AGFA), and Hoechst, which controlled Casella and Kalle on the other hand. The largest of these firms had gone abroad fairly early. In Russia, BASF, Bayer and Hoeschst founded or participated in producing affiliates in 1877, 1883 and 1885 in response, as is generally asserted, to growing Russian protectionism after the tariff moves of 1877.[67] The smaller chemical firms (Cassella, Kalle, and AGFA) came to Russia in the following years. Especially in the dyestuffs sector, production by these affiliates comprised only the final stages; intermediate products on which the duties were much lower were imported from the parent firms; in this specific case they contributed up to 80 per cent of the value added.[68] Tariff problems, but even more the French patent law which required an immediate start of production in the country by patent holders, were responsible for the foundation by Hoechst in 1881 of the Compagnie Parisienne de Couleurs d'Aniline which started production of aniline dyes and pharmaceutical products at Creil (Oise) in 1884.[69] BASF had started a plant in 1878 at Neuville-sur-Saône near Lyon.[70] A change in British patent legislation occurred in 1907 which prescribed that a foreign patent, after its transfer to Britain, had to be exploited there or else it would be revoked. As a result Hoechst, representing also Cassella and Kalle, established a plant in Ellesmere Port near Liverpool and BASF, acting for the Dreibund, founded the Mersey Chemical Works not far from there and transferred nearly one-fifth of its patents to this new affiliate. In the following years Hoechst produced practically the whole volume of domestic production of indigo, amounting to about 50 per cent of domestic demand, at Ellesmere Port, whereas the

BASF subsidiary concentrated on other aniline dyes. Patent transfers from Germany decreased, however, very soon after it became clear that British jurisdiction had, in practice watered down the enforcement of the 1907 Patent and Designs Act.[71] Looking to the situation of British producers, Haber is probably right when he states that apart from the virtual failure of the new patent legislation, another possible measure, 'a tariff, would not have helped the British producers because they lacked patents, know-how and, above all, research and enterprise'.[72]

The impact of patent legislation is also shown in the case of the United States where there was no legal obligation to use patents given by the US administration in the country itself. For this reason the BASF thought it useless to establish a factory there. It registered, however, up to 1914 about 1000 patents. Roughly the same number were registered to Bayer, which owned, however, a factory at Albany, NY and another company, the Synthetic Patents Company, Inc., which held all the Bayer patents registered in the US and gave licences to the American Bayer Company; the latter was thus able to reduce its tax burden because gains from licences paid lower taxes than gains from production.[73] All the other German dye makers had little in the way of manufacturing in the United States; they did have, however, very extensive commercial organisations.

A final illustration could be given by the Italian case where there was, up to the First World War, no artificial dyestuffs production at all; in 1913, Germany provided 77 per cent of Italian dyestuffs imports. By making concessions to agricultural imports from Italy, the German negotiators succeeded after 1878 in all tariff discussions in keeping dyestuffs and related chemical imports totally free of all duties. Consequently there was not one German chemical plant of any importance in Italy.[74]

The dominant position of the German chemical industry before 1914 was certainly due to patented technology and intangible know-how based on significant outlay on research and development. If at the same time foreign states were not willing to respect the simple registration of patents but demanded that they be actually implemented within the national frontiers, if they constructed tariff walls or if they fell back on non-tariff trade measures, then direct investment was the logical consequence if a specific market was to be conserved.

Technology and Finance: the German Electrical Industry

The last sector that will be considered here is electrotechnical production where German industry shared world-wide leadership with US trusts. According to one estimate, Germany in 1913 had a share of about 35 per cent of world production as compared to a United States share of 29 per cent,[75] whereas another estimate gives a figure of 31 per cent for Germany

and 35 per cent for the United States.[76] There is agreement, however, that German industry dominated world exports of electrotechnical material with its share of 46 per cent, followed by the British with 22 per cent and their American competitors with 16 per cent.[77]

This is not the place to discuss the rise of the German electrotechnical industry as such.[78] I should only mention that Siemens & Halske started as early as 1847 and owed its success during the first three decades of its existence mainly to business in the telegraph and later in the slowly developing telephone sector. Its main competitor, the Allgemeine Elektricitäts-Gesellschaft (AEG), only started in 1883 as the German licenseholder of Edison. During its first decade it depended, apart from its technical ties with the American Edison companies, quite heavily on the Deutsche Bank and Siemens itself, both of which took equity participations. The rise of the AEG took place in the high-voltage sector right from the beginning and still more so when it had finally gained complete independence from Edison and Siemens in 1894. Siemens, the older firm and more conservative in its outlook, fell back comparatively because it did not involve itself so much in the high-voltage business during the late 1880s and the early 1890s. However, at the turn of the century, it began to expand again in this sector too, when it had been transformed into a limited liability company and its liquidity problems had been solved. Like a considerable number of smaller companies, the third competitor, Schuckert, founded in 1873, could hardly survive the crisis of 1901 which hit the German economy particularly hard and above all its too rapidly growing electrical industry. In 1903 Schuckert merged its plant with Siemens which combined it with its own high-voltage activities in the new firm of Siemens-Schuckert, although Schuckert remained independent as a holding company retaining participation in a considerable number of domestic and foreign power, tram and lighting companies. In any case, after 1903 the German electrotechnical industry was characterised by a virtual duopoly of Siemens and AEG which dominated the market, leaving space however to a host of smaller so-called 'specialised' firms.

What interests us in this context is the international dimension of this sector, and there can be no doubt that it was important right from the beginning. It started at a very early stage in the case of Siemens, which, as a consequence of considerable orders from the Russian government for the construction and maintenance of a telegraph network, established a plant at St Petersburg as early as 1855, where parts sent from Berlin were assembled. The Russian business was directed on the spot by Carl Siemens, brother of Werner, the firm's founder, and it was another brother, William, who represented the Siemens interests in Britain from 1850 and directed the British Siemens subsidiary (founded in 1858), which started with the production of sea cables in 1863.[79] In order to settle disputes about responsibility and profit distribution which had arisen between the

brothers, the whole firm was reorganised in 1867 under the roof of a common business (*Gesamtgeschäft*) with its seat at Berlin; it split up into two companies, Siemens & Halske in Berlin and Siemens Brothers in London; the Russian branch was assigned as an affiliate to Siemens & Halske.[80] One could talk, of course, at first sight of a multinational group, which had been formed with a centre in Berlin and direct investments in Britain and Russia. But if one looks more closely, one sees that at least in the British case William Siemens operated quite independently, relying financially on his brother Werner in Berlin on occasions. The whole family enterprise structurally was more similar to more traditional models, for instance to the business of Huguenot bankers and merchants in the Refuge operating contemporaneously in Geneva, Amsterdam and London, if not in Paris.[81] Even after the turn of the century 'the great principle of international family unity' characterised the different Siemens branches,[82] and this meant that when there were problems a member of the family was called in to manage the various foreign affiliates. Expansion abroad continued in the sense that in 1903, for instance, there were 30 so-called technical bureaux installed, eight of them in European countries.[83] Some of these started production, normally at first by assembling parts sent from the mother firm, as for instance in 1879 in Vienna and in 1903 in Bratislava, in the Hungarian part of the Habsburg Empire, where after the merger with Schuckert its plant was incorporated.

In some countries, as for instance France, where anti-German feelings after 1871 certainly did not favour sales and autonomous direct investment, joint ventures proved to be a viable solution. Thus in 1889 Siemens & Halske, Siemens Brothers (London) and the Société Alsacienne de Constructions Mécaniques (Mulhouse) founded a jointly-owned company which was supposed to produce high-voltage material in Belfort, just on the French side of the border. The Mulhouse firm which held a share of 37.5 per cent was to provide all the non-electrical mechanical equipment, and Siemens the electrical parts. In the longer run the Belfort company proved to be quite successful but Siemens had to withdraw from it in 1904 since the merger with Schuckert the year before had left Schuckert's French subsidiary, the Compagnie Générale d'Electricité de Creil, founded in 1897, practically at Siemens' disposal. Consequently, Siemens rented the Creil works from the Schuckert holding which formally was still independent. With the Société Alsacienne a jointly-owned cable factory at Belfort was nevertheless continued.[84]

In Russia production for low- and high-voltage material started in 1880–2. The reason must be seen not so much in the increasing Tsarist tariff duties as in the growing pressure from the Russian administration which insisted on domestic production for continuing State orders.[85] The AEG for its part resisted such pressures for quite a long time and tried to look after its Russian business through local agents. In 1898 it founded an

affiliate for Russia which was simply a sales company based in Berlin and had to transfer its legal seat in 1902 to St Petersburg so as to avoid being thrown out of business. Only in 1905, after its merger with the Union Elektricitäts-Gesellschaft, previously controlled by General Electric, could the AEG get hold of the Union's electrotechnical factory at Riga.[86]

We could go on listing other examples of direct investment by the German electrotechnical industry, but looking at the motives we would find in most cases State intervention in the form of tariffs or non-tariff trade measures, especially if the State was an important customer, as in the case of Russia. However, there must have been still other factors at stake if, for instance, in 1913, 87 per cent of all electrotechnical imports to Russia came from Germany,[87] if in the same year in the Italian case the quota of imports from Germany reached 70 per cent[88] and if the German electrotechnical industry succeeded in taking up regularly about half of Argentinian imports in this field between 1903 and 1913.[89] The reason must be found in the so-called *Unternehmergeschäft*, which meant that the large German trusts created their own market by founding local and regional power, tramway and lighting companies in those countries (for example Russia, Italy, Spain, Latin America) and for those customers (particularly local public authorities) which suffered from chronic lack of capital, and because these new companies were forced by statute to buy their electrotechnical material from their big industrial founders.[90] No doubt these operations were further steps in internalisation bound to reduce the risks of selling in a foreign market. On the other hand, the risk was created of accumulating a growing volume of equity capital and bonds in the portfolio of the electrotechnical producers and a dangerous reduction of their liquidity. The solution lay in founding financial holdings together with the great banks. These financial holding companies took over the shares and bonds of the newly created public utility companies, held them in their portfolio during the period of construction and initial development and sold most of their holdings to the general public as soon as they had 'matured' and yielded a profit, afterwards in general only retaining controlling minority holdings.[91] Each of the German producers possessed such an intermediate financial holding. AEG had the Bank für elektrische Unternehmunger, founded in 1895 in Zürich by itself and a number of German and Swiss and, to a minor extent, Italian and French banks. The same holds for Siemens with its Basel-based Schweizerische Gesellschaft für elektrische Industrie, created in 1896, and its Elektrische Licht- und Kraftanlagen AG, founded at Berlin in the same year. Schuckert and the minor electrotechnical producers possessed, of course, their own *Finanzierungsgesellschaften*. The fact that part of these financial holdings were based in Switzerland or Belgium (in the latter country, for instance, was the AEG-controlled SOFINA) arose mainly from the very liberal company law and stock exchange regulations of these countries. In part, it probably

owed something to the participation of the influential Swiss and Belgian banks in these holdings.[92] One can further observe an increasing regional specialisation by the creation of national or regional subholdings controlled directly by the electrotechnical producer and its banks or by one of its financial holdings such as, for instance, the Società per lo sviluppo delle imprese elettriche in Italia and the Deutsche Überseeische Elektricitäts-Gesellschaft, the one 'responsible' for Italy, the other for Argentina, Chile and Uruguay, both of them emanations of AEG.[93] As a result, in 1913 about 50 per cent of the capital of the Italian and about 40 per cent of the Russian companies producing electrical energy were controlled by German capital.[94]

Even if one can agree that the German *Elektrokonzerne* enjoyed substantial ownership advantages because of their superior quality of management, their advanced technology in electrotechnical mass production, their thorough marketing techniques and their after-sales service, the high-voltage material itself was by the mid-1890s technically 'mature' and in the medium term few observers expected radical innovations. For German industry this meant probably slowly shrinking advantages and growing competition on the world market, especially from its US rivals. It could, up to a certain degree, meet this challenge—particularly in countries where investment capital was relatively difficult to obtain—through the extraordinary process of internalisation described above, which was made possible by the advantage of easy access to factor markets, that is, in this case to international capital via its financial holdings and ultimately via its close ties to the German type of mixed banks.

When the First World War ended this access to the international capital markets and led to the loss of the major part of German direct investment, the high-voltage business of the type described above found itself in considerable difficulties. But—and the Italian example shows this quite well—the then technologically faster advancing low-voltage sector (above all the telephone installation business) survived much more easily and its exports performed comparatively better in the inter-war period.

Summing up, it must be emphasised that the examples and brief case studies offered in this chapter do not provide a comprehensive study of German MNE before 1914. What is needed in the future are studies that concentrate on the historical development of a specific German multinational as well as the type of synthetic overview that Mira Wilkins has done for US MNE. At the same time the point must be made that the astonishing vitality of the pre-1914 German economy and its rapid international expansion cannot be described in a convincing way without reference to the MNE, its concepts and its gradual evolution.

Notes

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Entwicklung und Stand der pharmazeutischen Grossindustrie Deutschlands (Berlin, 1923), p. 12; W. Vershofen, *Wirtschaftsgeschichte der chemisch-pharmazeutischen Industrie*, vol. 3 (Aulendorf, Württ, 1958), p. 39ff.

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37. R. Schmitt, op cit, pp. 218, 164.
38. Merck archives, F3 Nr. 10.
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40. For the following see above all *Denkschrift anlässlich des 25-jährigen Bestehens von Kathreiners Malzkaffee-Fabriken, 1892–1917* (München, 1917); H. Aust, *Organisation eines Markenartikel-Grossunternehmens der Nahrungs- und Genussmittelindustrie* (undated typewritten manuscript in the library of the Institut für Weltwritschaft at Kiel, Germany), particularly p. 35ff., 167ff.
41. For an analogous strategy in the same market but with another type of coffee surrogate see the case of the Heinrich Franck firm of Ludwigsburg mentioned by T.R. Kabisch, op. cit., p. 280ff.
42. R.E. Caves, 'International Corporations' and T. Horst, 'The Multinational Corporation and Direct Investment. A comment' in P.B. Kenen (ed.), *International Trade and Finance. Frontiers for Research* (Cambridge, 1975), pp. 368–9 see the typical MNE as a large oligopolistic firm whereas B. Swedenborg, op. cit., pp. xiv, 153ff., looking at the historical development of Swedish multinationals, comes to the conclusion that 'large firms do not have a higher propensity to produce abroad than small firms do' (ibid., p. 188).
43. O. Debatin, *Sie haben mitgeholfen Lebensbilder verdienter Mitarbeiter des Hauses Bosch* (Stuttgart, Robert Bosch GmbH, 1963), p. 37ff; *Fünfzig Jahre Bosch 1886–1936* (Stuttgart, 1936), pp. 27, 290.
44. O. Debatin, op. cit., p. 46; see also T. Heuss, *Robert Bosch: Leben und Leistung* (München, 1975; 1st edn Tübingen 1946); *75 Jahre Bosch 1886–1961.*

Ein geschichtlicher Rückblick (Stuttgart, Robert Bosch GmbH, 1961).

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46. Ibid., p. 60; O. Debatin, op. cit., p. 23.

47. O. Debatin, op. cit., p. 20.

48. R. Poidevin, op. cit., p. 20.

49. *Fünfzig Jahre Bosch.*, p. 25.

50. O. Debatin, op. cit., p. 32ff.

51. *Der Bosch-Zünder*, p. 60; *75 Jahre Bosch*, p. 31, T. Heuss, op. cit., p. 121.

52. *Der Bosch-Zünder*, p. 61ff; *75 Jahre Bosch*, p. 34.

53. O. Debatin, op. cit., p. 68ff.; T. Heuss, op. cit., p. 122; T.R. Kabisch, op. cit., p. 32.

54. O. Debatin, op. cit., p. 55ff.; T. Heuss, op. cit., p. 150ff.

55. *Alien Property Custodian Report*, p. 109.

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58. See especially *75 Jahre Mannesmann. Geschichte einer Erfindung und eines Unternehmens, 1890–1965* (Düsseldorf, Mannesmann Aktiengesellschaft, 1965), p. 27ff.; P. Hertner, 'Fallstudien zu deutschen multinationalen Unternehmen vor dem Ersten Weltkrieg' in N. Horn und J. Kocka, *Recht und Entwicklung der Grossunternehmen im 19. und im frühen 20. Jahrhundert* (Göttingen, 1979), pp. 388–419, particularly p. 400 ff; H. Pogge von Strandmann, *Unternehmenspolitik und Unternehmensführung. Der Dialog zwischen Aufsichtsrat und Vorstand bei Mannesmann 1900 bis 1919* (Düsseldorf, 1978); A. Teichova, 'The Mannesmann Concern in East Central Europe in the inter-war period' in A. Teichova and P.L. Cottrell, *International Business and Central Europe, 1918–1939* (Leicester, 1983), pp. 103–37, particularly pp. 103–6.

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62. P. Hertner, 'Deutsches Kapital in Italien', p. 66ff.

63. A. Teichova, op. cit., p. 105.

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65. L.F. Haber, op. cit., p. 108.

66. Ibid., p. 121.

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89. G. Jacob-Wendler, op. cit., p. 69.
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5

Japanese Multinational Enterprise before 1914*

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The current scholarly interest in contemporary Japanese businesses has somewhat obscured their equally fascinating early historical development. In this article, Professor Wilkins emphasizes both the extent and the variety of Japanese multinational enterprise before the First World War, and offers a basis for comparing its differences and similarities with the conventional American model.

Just as American and European multinational enterprises have a history preceding recent times, so Japanese multinational enterprises have existed since well before the Second World War—indeed, since the late nineteenth century.[1] Yet, although a substantial literature has grown up on the current remarkable expansion of Japanese business abroad, considerably less attention has been paid to the historical developments.[2] This article explores some of the early (pre-1914) activities of Japanese multinationals.

Views of Multinational Enterprise

The ensuing discussion adopts the now-common practice of including not only those multinationals that manufacture, but also all business enterprises that extend over borders and have regular employees overseas. This definition is broad enough to include trading companies and other "service-sector" investments, such as banking and shipping. Alfred D. Chandler, Jr., has questioned whether the seventeenth-century English, Dutch, and other East India companies—trading companies—should be termed multinational enterprises.[3] These firms did possess many attributes of contemporary multinationals: they operated over borders, they co-ordinated operations within a single enterprise, and they participated in activities beyond trade, since they had representatives stationed outside

their homelands. Chandler argued that they were nonetheless substantially different from modern multinational corporations in one fundamental respect—the quantity of their transactions. In the seventeenth century, when these giant Western trading firms came of age, months were required to send messages and receive replies. The slowness and uncertainty of communications precluded development of the coordination and control of large numbers of transactions—the administrative organizations—that are the characteristics of the modern multinational enterprise. The literature has therefore come to reflect the view that the modern multinational firm developed only in the late nineteenth century when steam-ships, cables, railroads, and telegraphs united distant areas.

This discussion needs refinement in the Japanese context. Much of the early international business of the Japanese trading companies clearly was constrained by distance and delays in the transmission of messages. Yet, a very important distinction exists between the East India companies of the seventeenth century and the Japanese trading firms: the Japanese enterprises have survived into the twentieth century as viable and important economic units, taking advantage of the modern innovations in transportation and communication. Because these businesses bridge the gap between historical and contemporary study, no treatment of Japanese multinational enterprise should exclude them.

One of the most fascinating topics in the history of Japanese multinationals is the "layering" of the Japanese trading company and the Japanese manufacturing enterprise, as the two types of firms both expanded overseas. The large Japanese trading companies with general experience in international trade could not develop specialized knowledge of the varied products that constituted parts of their business; on the other hand, an individual manufacturing company knew its particular goods thoroughly, but did not have international business experience. As a response to this difficulty, the producer came to replace the trader in some international investments, while in others joint ventures between trading company and manufacturer were organized. These relationships need systematic analysis, for which the historical record provides fruitful data. The timing and nature of the shifts relate to the volume and importance of the activity; the extent to which they were also a function of the type of product requires further investigation.[4]

Much of the research on multinational enterprise has been based on an American model, which views the company (usually an industrial one) as expanding abroad out of domestic growth and particularly out of experiences in its own domestic market. Students of multinational enterprise have been impressed by the general applicability, in both contemporary and historical terms, of that paradigm, in which the advantages of manufacturing firms at home (in their home activities) become advantages in foreign countries. Firms internalized—that is, handled within the single

enterprise—added operations abroad. Sometimes the American model has been carried further; scholars have argued that certain industries in which American business excelled worldwide were by their very nature amenable to multinational-type behavior.[5]

Students of contemporary multinational enterprise have not been content to look only at investment, but have also examined the institutional nature of corporate expansion. The path American companies took internationally seemed to represent a universal one. Studies of contemporary European, and, to a large extent, Japanese, multinational enterprises therefore followed the same pattern of analysis. The outstanding work of Raymond Vernon, John Dunning, Charles Kindleberger, Richard Caves, and Mark Casson—to mention a few leading scholars—makes the assumption that a general model of multinational enterprise is broadly applicable.[6]

Just as contemporary studies of multinational enterprise multiplied when American business was triumphant around the world, so historical scholarship on multinational enterprise blossomed then. The history of American companies abroad accordingly formed the basis for the initial research on the history of multinational enterprise. In the 1970s and early 1980s new and substantial attention turned to the growth of European multinational enterprise, and many students of this development assumed that the historical course of European business abroad was fundamentally the same as that of its American counterpart. Systematic variations were usually explained by reference to differences in comparative advantage in the home countries, while the similarities seemed remarkable. Reflecting this view, a leading student of multinational enterprise who has dealt with both the contemporary and historical aspects of the subject, Raymond Vernon, has written, "By the early 1980s ... the multinationalizing trend was widely recognized as similar in nature irrespective of the nationality of the parent firm."[7]

While striking similarities unquestionably exist, some scholars have had doubts. Kiyoshi Kojima described Japanese multinational enterprises as trade-creating. American ones as trade-destroying. Keiichiro Nakagawa stated at a business history conference in 1982, "I do not think Japanese and Western firms developed their overseas activities in the same way."[8] This article looks at the early history of Japanese business overseas, and asks whether it resembled or differed from the pattern familiar to students of either contemporary multinationals or multinationals in historical perspective. A critic of a preliminary draft of this article asked, rhetorically, "Why wouldn't one assume that cultural and situational factors led to different business practices [by Japanese enterprises] prior to 1914, especially when it is evident that they still do today?" Obviously, this historian is correct, yet this assumption has frequently not been made, because of the acceptance of the more general model by students of

multinational enterprise.[9] It is inadequate, moreover, to allude to vague cultural differences or to special historical traditions. Patterns might exist in the similarities and differences, patterns that this essay seeks to decipher.

The present article is not meant to be definitive. Its uniqueness lies in its attempt to understand the course of pre-1914 Japanese multinational enterprise based on available statistics and evidence, and to suggest some of the reasons for the similarities and, more important, for the differences, between the beginnings of modern Japanese and modern American multinational enterprise. This article applies general insights developed through research on the history of multinational enterprise specifically to the history of Japanese developments. It demonstrates the extent of Japanese multinational enterprise before the First World War (which may surprise some readers) and endeavors to explain the breadth of the involvement. Hopefully, it will stimulate additional inquiries.[10]

Bases for Comparison

In the late nineteenth and early twentieth century, when American and Japanese modern multinational enterprises first took form, Japan was far behind the United States in the industrialization process. As noted, others have pointed out that multinationals in various home countries develop differently based on different comparative advantages. America was a nation were labor costs were high; land was available and raw material costs were relatively cheap. Thus, American technology emphasized labor-saving devices (substituting captial for labor) and was wasteful of raw materials. In terms of inputs for a modern industrial economy, Japan's development was characterized by the need for imported raw materials and for the exports to pay for those imports. To be sure, in the late nineteenth century Japan was an exporter of raw materials—of coal and raw silk; and while silk exports retained their importance, Japan became aware of its requirements for basic raw material imports far faster than the United States did. The United States after all had cotton, iron, and coal—all the key items of the early Industrial Revolution. Japan soon became an importer of raw cotton and of iron, and even its coal eventually became inadequate for its needs.

Other significant features of the American and Japanese home environments can be compared: 1) the size of the home market; 2) heterogeneity or homogeneity at home; 3) national status as importer or exporter of capital; 4) geographical position vis-à-vis other economic leaders; and 5) antitrust attitudes. Why select these particular aspects through which to study Japanese multinationals? I have already used these items to define differences between American and European firms; it is valuable, for comparative purposes, to employ the same framework in considering

American and Japanese business. Moreover, using these aspects as a handle for discussion brings out key elements in the history of Japanese multinationals.[11] The five points utilized in this inquiry (which are by no means all-inclusive) provide help in understanding some significant similarities in the evolution of U.S. and Japanese multinationals, important differences, and in addition the nature and extent of pre-1914 Japanese multinational enterprise.

The Home Market

By the beginning of the twentieth century the United States constituted the world's largest market, while Japan did not yet rank as an important market, based on international comparisons. Put simply, Japan was a far less developed country than the United States. In 1913 the United States had the world's greatest manufacturing output, representing some 35.8 percent of world production; Japan's represented a mere 1.2 percent. By every criteria, Japan's national market was smaller than that of the United States: in geographical size, per capita income, and population size. (Japan's average annual population [1905–9] was 47.5 million, compared to the U.S. population at the time of 87.1 million.) These differences in the size of the home market would almost by definition lead one to anticipate a separate pattern of multinational enterprise development.[12]

When one views Japanese industrialization in the late nineteenth and early twentieth century, what stands out? Not the mass production, not the beginnings of mass consumption that were characteristic of the American economy and that presented the managerial challenges in the United States. Rather, in Japan the important circumstances were the rapid coming of age of the Japanese domestic textile industry; economic growth and military triumphs (in the Sino-Japanese War and the Russo-Japanese War); and a recognition that because of its resource limitations and the smallness of the country—as defined earlier—Japan would by its very nature be highly dependent on trade, on imports of raw materials. Exports were required, in turn, to pay for these imports, creating a fundamental need for an infrastructure in support of trade—banking facilities, shipping companies, shipbuilding, insurance, and, most of all, enterprises familiar with the complexities of doing business abroad—that is, trading companies. Without such activities, Japanese economic development could not occur.[13]

All of these functions, however, could be carried on by foreigners. Indeed, in many countries around the world, foreign-headquartered multinational enterprise did control international trade. Why was Japan different? Why did its nationals come to handle and to control all these important functions? Perhaps Japanese companies undertook these activities, on a broad scale, because foreign business was not prepared to do

so, and because the trade was more important to Japan than to her trading partners.[14] The relatively limited Japanese home market, resulting in small domestic firms incapable of handling extensive international trade by themselves, was an even more significant influence on the development of a Japanese-run infrastructure for overseas trade: specialized companies were required to carry forth operations abroad. The Japanese management challenge was, accordingly, different from that facing U.S. business.

Interestingly, in late nineteenth- and early twentieth-century Britain, also a small country by geographical size, constant problems of management over distance also existed, and the response to them was often the establishment of specialized institutions; trading companies, managing agencies, consulting engineers and, of course, shipping companies—in short, a service apparatus. The Japanese use of trading companies and development of service-sector companies in general seem closer to the British than to the American experience.[15] Also, like the British, the Japanese made some large foreign direct investments in railroads, specifically designed to meet Japanese domestic requirements.

Heterogeneity and Homogeneity

If one assumes that multinational enterprises arise out of domestic conditions, one must look to other specific circumstances as well. Japan, unlike the United States, was not a country of immigrants. The American market was characterized by domestic diversity. In contrast, a visitor to Japan is impressed by the homogeneous nature of the population. Years of isolation produced a separate development, a distinctive ethic, that must be taken into account in any discussion of the evolution of Japanese multinational enterprise. Two pertinent consequences were inexperience at home in working closely with outsiders (creating a larger sphere of what was alien and unfamiliar) and a less varied demand for goods (resulting in a rigidity in taste). Here again, the parallels between the Japanese and British situations seem far closer than those between the Japanese and American experiences.

Comparison of American and European multinationals suggests that business enterprises investing abroad use three methods in coping with the unfamiliar: they seek out the most familiar within the unfamiliar; they try to create the familiar within the unfamiliar; and they adapt. It is easier to adapt in relatively familiar circumstances than in unfamiliar ones. In the American case, early foreign investment went disproportionately to geographically nearby areas—Canada, Mexico, and the Caribbean—and to culturally nearby ones—Great Britain.[16] The earliest Japanese foreign investments were, likewise, in geographically close and relatively familiar regions.

Japanese Investment in China

In 1931, the Bank of Japan prepared statistics on Japanese foreign investments in 1914 at the special request of American economist Harold Moulton (see Table 1). Moulton added estimates for other investments not covered and concluded that the total for 1913–14 amounted to 600 million yen (or $295.5 million at 100 yen = $49.25). A recent Japanese source provides similar figures (see Table 2), based on estimates of Japanese investment in China prepared for C.F. Remer for his 1933 study and the Moulton 1931 figures from the Bank of Japan on the United States and Hawaii. All of the Moulton-Bank of Japan "elsewhere" figures are attributed in this rendition to the Philippines and the South Sea Islands. The estimates indicate Japanese investments abroad in 1914 of between $227 and $296 million.[17] To provide a sense of the dimension of such foreign investments, they can be calculated as a percentage of 1914 Japanese gross national product, amounting to 9.9 percent and 12.8 percent, respectively—surprisingly high percentages; the figures include both portfolio and direct investments.[18]

The estimates show that Japanese foreign investments in 1914 were largest in China (including Manchuria), and consisted overwhelmingly of foreign direct investments that carried management and control. All the foreign direct investments seem to be closely related to Japanese development, including the Japanese government's sizable investment in the South Manchurian Railway (1906). They need to be studied within the framework provided by current knowledge on the nature of multinational enterprise.[19]

The Shimonoseki Treaty between Japan and China was signed in 1895, for the first time permitting foreigners to manufacture in Chinese treaty ports. Almost at once a British trading firm, Jardine, Matheson & Company, established the Ewo Cotton Spinning and Weaving Company in Shanghai, and three other foreign textile firms quickly followed (another British, one American, and one German).[20]

Japanese spinners saw their export markets in China threatened by these foreign-owned manufacturing facilities. Accordingly, two Japanese spinners established plants in Shanghai, but, as Tetsuya Kuwahara found, these initial ventures failed because of inadequate evaluation of the market and ineffective management. The Japanese retreated to a more familiar activity—exporting from Japan.[21]

Then, in 1902, Jōtarō Yamamoto, the Shanghai branch manager of Mitsui & Co., purchased a Chinese cotton mill and reestablished it under the name Shanghai Cotton Spinning Company, Ltd. Four years later, Mitsui & Co. acquired the Santai Cotton Spinning Company, Ltd., another Chinese cotton mill, extended its capacity, and placed Yamamoto in charge. On 5 December 1908, Mitsui organized a new local subsidiary,

Table 1 Japanese foreign investment, July 1914 (based on unpublished Bank of Japan figures)

Location and type	*Value in millions of*	
	Yen	*Dollars*
China:		
Loans to	54.70	26.9
Foreign securities purchased	6.45	3.2
Business enterprises:	400.00	197.0
In China	(310.00)	(152.7)
In the United States and Hawaii	(50.00)	(24.6)
Elsewhere	(40.00)	(19.7)
Totals	461.15	227.1

Source: Harold Moulton, *Japan* (Washington, D.C., 1931), 391–92. Rate of exchange used: 100 yen = $49.25.

Table 2 Japanese foreign investment, in 1914 (Ippei Yamazawa and Yuzou Yamamoto estimates)

Location and type	*Value in millions of*	
	Yen	*Dollars*
China	439	216.2
comprising		
Loans to government	(19)	(9.4)
Loans to private enterprise	(35)	(17.2)
Direct investments	(385)	(189.6)
The United States and Hawaii	50	24.6
The Philippines and the South Seas	40	19.7
Totals	529	260.5

Source: Ken-ichi Yasumuro, "The Contribution of the Sogo Shosha to the Multinationalization of Japanese Industrial Enterprise," in *Overseas Business Activities*, ed. Akio Okochi and Tadakatsu Inoue (Tokyo, 1984), 84. Professor Yasumuro's source was a 1979 Japanese volume on foreign trade and the balance of payments by Ippei Yamazawa and Yuzou Yamamoto. Rate of exchange used: 100 yen = $49.25.

Shanghai Cotton Manufacturing Company, which owned the two spinning mills. Yamamoto managed this affiliate separately from Mitsui & Co., because Takashi Masuda, the risk-averse head of Mitsui, did not want the trading company itself to become directly involved. Ken-ichi Yasumuro noted that Masuda "preferred to earn commissions by acting as an intermediary between buyers and sellers"; should the Chinese mills fail, Yamamoto would take the blame. In fact, Shanghai Cotton proved very profitable. By 1914, the firm had also installed 886 looms, and thus participated in weaving as well as spinning.[22]

The Japan Cotton Trading Company, a major firm in the raw cotton trade, had a cotton spinning mill in Shanghai by that time. In 1909 the Naigaiwata Company, a Japanese spinner, built what has been described by Yasumuro as "a new and powerful spinning mill in Shanghai." Equipped with the most advanced machinery and managed by a Japanese staff sent from the parent company, its labor-management relations replicated Japanese practice—for example, by providing dormitories for Chinese girls working at the mill. It was extremely successful. The Naigaiwata Company had been a trading firm, but it had bought out two Japanese spinners and established itself as a spinner in Japan before entering China.[23] Naigaiwata was the first Japanese spinner (as distinct from trading company) to be a success in manufacturing in China. Whereas the Japanese trading companies had bought existing Chinese mills, it constructed its own mill, following its own designs. While the Naigaiwata Company was not one of the largest spinning establishments in Japan, it gained experience from its Japanese mills before it began to manufacture abroad; by 1914, based on its Japanese and Chinese assets, it ranked nineteenth among the one hundred largest Japanese mining and manufacturing companies.[24]

By 1913, the Shanghai mill of the Naigaiwata Company was far more efficient than any Chinese-owned mill. Kuwahara explains that when the other, larger Japanese spinners made plans for mills in China, one important factor encouraging their subsequent entry was their recognition of the capability of Naigaiwata's Shanghai mill to compete in the Chinese market, a competitiveness that Kuwahara attributes to management knowledge. The Japanese mill owners also had the advantage of experience in buying raw cotton. Hiroaki Yamazaki suggests that a third advantage lay in their practice of blending raw cotton from different sources to obtain low-cost raw materials.[25]

Recently Stephen C. Thomas has argued that "the initiation of the Chinese-owned cotton industry was one of the most promising achievements of the pre-1897 period." He maintains that the foreign investments in China were a consequence of the profits being made by Chinese-owned mills. Then, severe competition from foreign-owned mills reduced profits. "By the early 1900s, three of [Chinese enterpreneur] Sheng [Hsuan-huai]'s mills had to be sold to Japanese interests...."[26] What does Thomas mean

by "had to be sold"? It seems likely that they were not competitive with imports and the European-owned mills.

All the Japanese textile investments in manufacturing in China served the Chinese market. They appear to have been established in response to the presence of both Western and Chinese investments in Chinese spinning mills, as well as to the sale in China of cheap Indian yarn. They all grew out of existing business operations. The Japan Cotton Trading Company and the Naigaiwata Company's initial interest in China seems to have been in the export of raw cotton from China to Japan. As the Japanese cotton textile industry developed, interest in export markets grew, and Japanese businessmen, whether trader or spinner, needed to know conditions in China.[27] The early twentieth-century Japanese investments in Chinese manufacturing may initially have been made to discover Chinese costs, test out Chinese raw cotton, and keep close to the Chinese textile market. Tariffs were not a consideration in these early investments.

Thomas maintains that "unlike sovereign countries ... China could not control ownership of this [cotton textile] technology after 1895, regulate imports with a protective tariff, or tax foreign-owned mills in China."[28] None of Thomas's commentary, however, explains Japanese competitiveness. The technology was not proprietary; and China's inability to regulate the import of products is irrelevant to foreign investment in manufacturing. The influx of Indian yarn, for example, may have stimulated Japanese investment, but Chinese businessmen could have responded in a comparable manner. Presumably tax policy could have been framed to void any advantages of the Japanese mills. Japanese superiority was not a consequence of suppression of Chinese sovereignty, but of experience and entrepreneurial ability. A Chinese-American historian, Kang Chao, writes:

> ... the cotton textile industry in Japan ... [by the early twentieth century] had developed some excellent management systems, marketing organizations, and raw material procurement organizations. It did not take long for the Japanese to apply these organization principles to their plants in China. Furthermore, managers of Japanese mills in China quickly learned to adapt to local conditions, probably because of the high degree of cultural and linguistic similarities between the two countries. All these factors contributed to the quick establishment of an overall superiority of Japanese mills over both Chinese and British mills.[29]

The Japanese investments were overwhelmingly in spinning, although, as noted, the Shanghai Cotton Manufacturing Company owned looms. In 1913, Japanese spinning mills in China had 111,900 spindles (compared to British-owned mills in China with 138,000 spindles); that year in China there were 886 Japanese-owned power looms (and 800 British-owned

ones). Whereas 63 percent of the spindles in China in 1897 were Chinese-owned and 37 percent Western-owned (with no Japanese ownership), by 1913 the ratios were 60 percent Chinese, 27 percent Western, and 13 percent Japanese. For power looms, in 1897 the ratios were 70 percent Chinese-owned and 30 percent Western-owned (none Japanese-owned); in 1913, 56 percent were Chinese-owned, 25 percent Western-owned, and 19 percent Japanese-owned.[30]

The pre-First World War Japanese investments in Chinese spinning and weaving were harbingers of far larger and more important ones to follow. They are, however, of particular interest in that they offer a preview of some of the dilemmas of trading (as opposed to manufacturing) companies as manufacturers abroad. The management of Mitsui & Co. in Tokyo was prepared to delegate decision making and management at the Shanghai spinning mills to its branch manager on the scene; the home company had little interest in the venture. The Naigaiwata Company, which used its direct experiences with its Japanese spinning operations as a basis for its Chinese mill, was the most successful of these early Japanese investors in China.[31] This was a case of creating the familiar abroad—creating the familiar within the unfamiliar. It was their transfer of familiar experience to China that contributed to the Japanese success. And, as Chao points out the Japanese were also prepared to adapt to Chinese conditions; it was easier for them than for westerners to do so.

What else do we know of the pioneer Japanese business in China? Albert Feuerwerker, using materials published in Peking in 1957, found that of the 136 foreign and Sino-foreign manufacturing and mining firms established in China, 1895–1913, forty-nine of them, or 36 percent of the total, were Japanese. The Japanese were the largest investors in terms of number of firms, followed by the British with thirty-seven firms and 27 percent of the total. In value, however, based on initial capitalization, the British investments represented 48 percent, the Japanese 25 percent. While Remer's 1933 book and Hou's 1965 study give details, we need to know much more about these ventures. They included the manufacture of bean oil in Manchuria (Nisshin founded a mill in Dairen in 1907 with a capital of 3.75 million yen), and the making of flour in Shanghai and Manchuria (Mitsui & Co., for example, had a flour mill in Shanghai).[32]

The Japanese exported matches in large quantities in the early twentieth century. In 1900–1914, the Chinese match market "was entirely in Japanese hands," and the Japanese were also making inroads into India and the Dutch East Indies. According to Remer, Japanese investors had five match manufacturing "plants or firms" in Manchuria and in north, central, and south China in 1914, though the sums invested were not large. The Japanese—with their highly competitive "cottage" match industry at home, using Japanese wood and chemicals imported from Europe—could compete through exports.[33]

The Hanyehping Coal and Iron Company, located just south of Hankow, represented one of the most important Japanese investments in China. From this firm's mines came the bulk of iron ore needed for the Japanese government-owned Yawata iron and steel works in Kyushu. The Japanese investments appear to have been in the form of loans, although by agreements the Japanese were given a "considerable degree of control, which was exercised through the Yokohama Specie Bank." The Japanese-controlled South Manchurian Railway (SMR) took part in developing the Fushin coal mines—the richest ones in Manchuria. In 1907 sales of Fushin coal were a mere 202,320 long tons; by 1913–14, they were 2.5 million long tons, roughly half of which was consumed in Manchuria (mainly meeting the SMR's requirements and those of the Chinese Eastern Railway) and half of which was exported to Japan.[34]

The government-supported Yokohama Specie Bank, founded in 1880, was international from its origin. It developed an extensive network of branches, facilitating trade through its participation in foreign exchange activities, trade financing, and even long-term financing of the raw material procurement needs of Japanese industry, as in its loans to the Hanyehping Coal and Iron Company in China. The Yokohama Specie Bank set up its first representative office in Shanghai in 1893, associated with the growing triangular cotton trade among Japan, India, and China. It did so at the request of Japanese businessmen, who—when India ended free coinage of silver that year—had major difficulties with foreign exchange transactions.[35]

The Industrial Bank of Japan, organized in 1900, and in operation by 1902, was used by the Japanese government to attract foreign capital and to help finance government-sponsored ventures. It provided early loans, for example, to the Tayeh mines that became part of the Hanyehping Company complex, and it raised monies for the South Manchurian Railway and for other investments in China. Hugh Patrick calculated that "of the 294.4 million yen in foreign portfolio capital underwritten by the Industrial Bank [1902–13] 46 percent was exported as semigovernmental direct investment," primarily to China and Korea. By 1902 a private bank, the Yasuda Bank, apparently also had important Chinese interests.[36]

Japanese companies assumed importance in Chinese shipping, as well as in other international shipping routes. Japan's first overseas shipping line was a weekly service from Yokohama to Shanghai, started by Mitsubishi as early as February 1875. Less than nine months later, in October, Mitsubishi acquired four ships from the Pacific Mail Steamship Company, an American firm, which relinquished its Yokohama-Shanghai service to its new Japanese rival.[37]

Mitsui & Co.'s first shipments to China (of coal) were on Mitsubishi ships. In 1880, Mitsui started its own Tokyo Fūhansen Kaisha (sailing ship company) for freight between domestic ports and China and Korea; it also continued to use Mitsubishi vessels. In 1885, Nippon Yūsen Kaisha (NYK)