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**THE SINO-JAPAN STEEL TRADE NEGOTIATIONS
FRAMEWORK**

Ian Dickson

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About the author

Ian Dickson is at the

Department of Economics
Chinese Economies Research Centre
The University of Adelaide
ADELAIDE SA 5005
Australia

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email **jholmes@economics.adelaide.edu.au**
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INTRODUCTION.

Japan is the largest supplier of steel products to China. Between January 1993 and June 1996, Japan provided on average 34 percent of China's steel imports, ahead of the nearest rival, Russia, whose share was 18 percent.¹ Japan's dominant position is the result not merely of geographic proximity coupled with steel-making capacity, but until recently, was also due to special-access trading arrangements. Under these arrangements, Chinese imports of ordinary steel from Japan were subject to formal bi-yearly contract negotiations, which settled prices and quantities to be supplied. The negotiations system started in 1972, and lasted for some 23 years, before coming to an "official" end after July 1995. "Unofficially", the Japanese steel producers may still be coordinating their steel trade with China.

The purpose of this paper is to outline the negotiations framework, canvassing possible sources of advantage to both the Japanese and Chinese sides (these advantages explain why both sides supported the system for such a long duration). Reasons behind the recent decline in Japanese support for the system are also discussed. Throughout, a general observation worth bearing in mind is that the arrangements involved a process of bilateral monopoly bargaining between collusive Japanese suppliers and the Chinese customer. Bargaining centred on the division of cost savings generated by the special size and nature of the business being transacted between China and Japan.

THE PROTAGONISTS.

China. The Chinese participant in Sino-Japan steel negotiations was China National Metals and Minerals Import and Export Company, otherwise known as Minmetals. Officially, Minmetals has had exclusive rights in managing China's steel purchases from Japan. Minmetals, founded in 1950, was one of the twelve original national trading houses with sole responsibility for conducting China's international trade

¹ See FIGURE 2, page 25.

during the period prior to the onset of economic reforms in 1978. The exclusiveness of Minmetals' role has subsequently diminished, but in some areas the organisation still exercises monopoly rights. In particular, its role with respect to procuring imports of ordinary steel from Japan is seen as an example.

Japan. The Japanese party has been comprised by a consortium of the six largest Japanese firms who run “integrated” steel making facilities.² The six major Japanese firms with this capacity are Nippon Steel Corporation, Nippon Kokan (NKK) Corporation, Kawasaki Steel Corporation, Sumitomo Metal Industries Ltd, Kobe Steel Ltd and Nisshin Steel Company. However, there are also many other steel producers in Japan, mainly smaller electric-arc furnace operators who do not manufacture their own pig iron (Godo Steel and Tokyo Steel are examples).

The label “Japan Inc.” is sometimes applied to the six producers mentioned above, in view of the collusive nature of their business relationships. The coordinated approach to steel negotiations with China is but one facet of those relationships. Other manifestations include the “collective buying system”, which sees the steel companies acting together to procure raw material inputs, such as coal and iron ore from Australia [*MB*, 14 Aug 1995]. The collective buying system aids Japanese bargaining strength in price negotiations. Other cartel manifestations include pressure exerted by the six major producers on Japanese shipping companies [*MB*, 11 April 1994], as well as complaints by the Osaka-based Japan Iron and Steel Importers Institute (JISII) that the six majors act to inhibit steel imports into Japan [*MB*, 22 Dec 1994].³ The six might do so by way of control over distribution networks, although there have also been rumours of an “East of Burma” agreement whereby Japanese and EU producers restrict sales to merchants in each others' markets. Finally, in the past, the Japanese steel firms had a coordinational approach in planning investments [Imai, 1980]. For purposes of convenience in what follows, the term “cartel” is sometimes used to refer to the six Japanese integrated steel producers.

² The term “integrated” means that mills contain all major production stages, including blast and oxygen furnaces to convert raw materials to pig iron and then steel, as well as casting and rolling facilities.

Champion negotiators. The original Sino-Japanese steel agreement in 1972 was struck under the leadership for Japanese of Yoshihiro Inayama, then President of Nippon Steel [NKS, 16 Jun 1995]. The role of Nippon Steel in the joint negotiations framework has been paramount. Nippon Steel took the negotiating lead, essentially deciding prices and quantities to be accepted by the other five Japanese companies. Under the negotiations system, “Nippon Steel represented the Japanese side and was responsible for dividing up the cake once an agreement had been reached” [MB, 19 Jun 1995]. Nippon Steel has also taken the lead in the “collective buying system” for raw materials, although with respect to other products, other firms have played the role of “champion negotiator” (see for example, *specialty steel* products, below).

THE NEGOTIATIONS FRAMEWORK.

Negotiations were conducted twice yearly, with venues alternating between Beijing and Tokyo. Negotiations concerned supply of 8 or 9 types of so-called “ordinary” steel products. The term ordinary, used in some industry references, may be misleading, because it encompasses products which in some contexts might be considered specialty steel. TABLE 1 shows that products included hot and cold rolled coil, galvanised sheet, tinplate, silicon electrical sheet, heavy and medium plates, as well as wire rods. The predominance of “flat” as opposed to “long” products reflects Chinese self-sufficiency in the latter. However, the Japanese have also supplied extra large structural sections, an example of a long product for which China still lacks sufficient production capacity.

Bi-yearly negotiations covered shipments by the Japanese majors during two periods, spanning (1) February to July and (2) August to January. According to the Managing Director of Minmetals Australia, the main thrust of negotiations was establishing prices for products to be purchased by Minmetals. Broad understanding as to overall quantities for the six month period was also established, but:

³ In these complaints, the JISII has found a predictable ally in the American Iron and Steel Institute.

“Of the two components in the talks -price and quantity- the latter is of lesser importance because both sides are only obliged to make “best efforts” to achieve the tonnage dispatch and receipt targets agreed” [MB, 6 Dec 1993].

This quote conveys the essential flexibility of the contract arrangements. Long-term contracts are usually thought of as lasting for a number of years. Contracts between Minmetals and the Japanese firms can therefore be construed as *short-term* in nature. Even for such a short duration as 6 months, the two parties were not prepared to make definite quantity undertakings, although as described later, the Japanese may have come to feel that the lack of hard volume targets was a disadvantage. The system of hard prices and soft quantities presents a curious contrast with Japan’s other arrangements, in particular, long-term contracts for raw materials purchases from Australia. In the latter, a combination of rigid quantity targets and indexation or trigger mechanisms on price has often been employed. Of course, the short-term duration of the Sino-Japan contracts obviates the need for such price-adjustment mechanisms,⁴ but the lack of hard quantity undertakings does seem surprising. This may have reflected unwillingness on the part of the Chinese to make concrete commitments. It is, however, necessary to note that whilst the contracts themselves were of a short term nature, the institutional framework under which contracts were negotiated was a more enduring fixture. Arrangements were loose, but the system represented a commitment by both sides to doing business with each other.

After the twice-yearly agreement on prices and broad quantities was reached, Minmetals presented, supposedly by the 20th of each month, a detailed list of product quantities to Nippon Steel (the Japanese champion negotiator). Presentation of the list by the 20th day of each month ensured shipment from Japan during the second calendar month thereafter. That is, if the order was made on 20 June, shipment would occur in August. Likewise, if the order was dispatched by 20 December, shipment could be guaranteed for February. Thus, there was an import lag of six to 8 weeks. Due to this lag, the main twice-year price negotiations for the August to January period would start in May, whereas negotiations for February to July supply would start in November. Failure to conclude initial price negotiations on time sometimes

⁴ At least in theory, for as discussed later, the Japanese side began to feel that contract prices with Minmetals were not responsive enough to changes in the world steel environment.

resulted in delays for the first monthly batch shipment (most notably, shipment in August 1994 was missed due to deadlocked negotiations).

SPECIALTY STEEL.

The arrangements discussed above apply to 8 or 9 types of so-called *ordinary* steel product, the main focus of this paper. However, separate arrangements (with different “champion negotiators”) existed for specialty and quality steel products.

Stainless steel. Negotiations for nickel- and chromium-grade stainless steel sheet take place on a quarterly rather than bi-yearly basis [NKS, 4 Dec 1995]. Quarterly periods are not contiguous with calendar year; the fourth quarter lasting from November to January [YCHJ, Nov 1994: 21]. Negotiations are supposed to take place on a one-to-one basis between each of six main Japanese stainless steel producers and Minmetals.⁵ However, given that each company appears to obtain the same price, a degree of coordination may exist, and judging from repeated references, Nisshin Steel Company takes the negotiating lead for the Japanese. Negotiations have not always been smooth. For example, owing to price disagreements, no stainless steel shipments occurred for the period August to October 1992 [YCHJ, Jan 1993: 39]. If all six producers withheld supplies to China for that period, then this again suggests collusive behaviour.

During 1994, the Japanese producers were successful in demanding large increases in prices for stainless cold rolled sheet shipped to China. For example, over a six month period between August 1994 and January 1995, prices on nickel-grade stainless steel sheet rose by \$370, to \$2070 per ton on a C&F basis. For chromium-grade, during the same period, prices demanded of the Chinese rose by \$230, to \$1580 per ton (C&F) [YCHJ, Nov 1994: 21]. In negotiations for shipments up to the end of April 1995, the Japanese were again demanding price rises, of \$480 per ton for nickel grade, and \$370

⁵ It has, however, been reported that the China National Nonferrous Metals Industry Corporation also orders Japanese stainless steel sheeting [NKS, 4 May 1996]. Also, the six Japanese companies represented are not the same as those entering ordinary steel negotiations. For instance, Kawasaki Steel does not appear to be represented, with Nippon Metal Industries included instead.

for chromium grade [YCHJ, Feb 1995: 22]. The ability of Minmetals to resist these demands was weakened by strong world demand, especially in adjacent Asian markets. Moreover, price increase magnitudes demanded of Minmetals were greater than for other Asian markets. The Japanese cartel indicated that “special” prices previously accorded to China were being eliminated over time, together with concomitant “special” conditions attached to Chinese purchases [YCHJ, Nov 1994: 21]. This development has parallels in ordinary steel negotiations.⁶

Seamless pipe. The other product type covered by a separate negotiations structure is seamless pipe. Sumitomo Metal Industries, as “champion negotiator”, leads three other Japanese firms, namely, NKK Corporation, Nippon Steel Corporation and Kawasaki Steel, in negotiations with China. However, the Chinese partner is not Minmetals, but rather, the China Minerals and Metals Petroleum Materials Company, otherwise known as “Minpeco”. The most important product type covered in these negotiations are tubes and pipes used in oil-drilling. For example, during February to May 1994, Minpeco ordered 158-9 thousand tonnes of seamless pipe, of which 142-3 thousand tonnes consisted of oil well pipe [YCHJ, May 1994: 12-3].

National investment projects. Another area not covered by the Sino-Japan ordinary steel negotiations may relate to priority investment projects in China. Epitomical examples of such projects include the Three Gorges Dam and the recently completed Beijing to Kowloon railway. Media reports indicate that steel imports needed for such projects may be procured by organisations other than Minmetals. For example, in November 1993, it was reported that Nippon Steel and NKK were hoping to secure an order from China’s International Tendering Corporation (ITC) for the supply of 35,000 tonnes of steel rails [MB, 8 Nov 1993]. Procurement by ITC does not preclude the possibility that trading corporations such as Minmetals were responsible for managing import, shipping and documentary procedures. Nonetheless, the role of enterprises such as ITC and Minpeco, as well as the possibility of independent Chinese buyers, qualifies the point mentioned at the start of this paper, that Minmetals exercises a monopoly over steel imports from Japan. Clearly, there are also other

⁶ See the section “prices and quantities” below.

Chinese enterprises involved in steel trade with Japan. However, the exceptions outlined here seem in the main to relate to the import of steel for highly specific purposes. Taking these exceptions into account, it seems safe to conclude that Minmetals retains a single-desk capacity over an *aspect* of China's steel trade, namely the case of imports of so-called *ordinary* steel varieties where the source country is Japan.⁷ The remainder of this paper focuses on the supply of ordinary steel, with occasional reference to stainless steel.

ADVANTAGES TO CHINA.

A number of important advantages accrued to Minmetals from the joint negotiations framework. Overall social utility to China is less clear, as for example, downstream factory users of steel imported by Minmetals faced both benefits *and costs*.

Stable supply. An important consideration behind the original adoption of the joint negotiations framework was China's desire to secure stable supplies of steel product [NKS, 7 Nov 1994]. Steel is a producer commodity, and reliability of supply weighs heavily on the minds of downstream processors and users.⁸ Delays in receiving steel materials can result in production interruptions. Storage and inventory problems may result if shipments are not received to schedule. Insufficient stocks of steel input could see users scouring the market to obtain supplies, again resulting in time and resource costs. Pressure to secure supplies at short notice, in an atmosphere of urgency, puts buyers at a disadvantage in price negotiations with suppliers.

China has been concerned to ensure supplies of the kinds of steel not produced in large quantities domestically. A much commented fact [eg., see Findlay *et al.*, 1993] is that China's production is centred on long rather than flat steel products. Flat

⁷ (1) In this context, it is also instructive to recall that some *ordinary* steel products, such as silicon electrical sheet, might not be considered especially "ordinary". (2) The dimensions of Minmetal's single desk capacity may also be restricted to the case of *ordinary trade*. This represents an unfortunate double-use of the term "ordinary", but refers in this context to one of a number of different types of tariff customs regimes under which imports can enter China. See the section in text entitled "Decentralisation of China's Imports".

⁸ More so with respect to specialty or high-value added steel varieties.

products are critical inputs in China's rapidly growing manufacturing industries. TABLE 1 (at rear of text) confirms that the Sino-Japan framework has delivered flat steel products. Other reports, concerning the Guangdong steel market, indicate products often in short supply include galvanised-, silicon electrical- and cold-rolled-sheet, as well as super-large structural sections not produced in China. Again, TABLE 1 shows that the Sino-Japan ordinary steel negotiations framework extended supply of these products.

Monopsony power. Another important advantage from the negotiations framework was that Minmetals gained monopsony bargaining power. To an extent, this would be true regardless of whether Minmetals negotiated with the six Japanese firms as a single cartel or whether it negotiated with each individually. It may be argued that the important point was simply that Minmetals was the only Chinese buyer, and so had monopsony leverage over price. In fact, bargaining power dynamics in the negotiations framework may have been more complicated than that argument suggests. The interests of chief negotiator, Nippon Steel, did not always coincide with those of the smaller Japanese cartel members. Not all Japanese steel mills "shared Nippon Steel's readiness to accommodate Minmetals' demands" [MB, 17 Nov 1994]. This suggests that Minmetals benefited not only from monopsony, but also because the negotiations framework put possibly recalcitrant steel suppliers under Nippon Steel's leadership. By and large, all six Japanese producers were willing cartel participants, but internal tensions did arise on occasions, and on those occasions, arrangements were "arguably to Minmetals' advantage in terms of pricing power" [MB, 17 Nov 1994]. See discussion below under "*internal pressures*" subtitle.

Lower prices. As a result of the negotiations arrangements Minmetals secured large volumes of steel from the Japanese at relatively low prices. (1) In part, cheaper prices won by Minmetals reflected monopsony bargaining power. But there were also other factors: (2) Long-term contract prices are usually lower than spot prices. For example, in October 1994, Japanese contracts for stainless steel involved prices of approximately \$2000 per ton, but spot prices were \$2400 per ton [YCHJ, Oct 1994: 17]. However, the main issue is why long-term contract prices for China were lower than equivalent contracts for other regions, such as SE Asia. (3) Originally, Japan was

willing to accord lower prices in return for an on-going guarantee of large contract volumes. (4) Large contract volumes may also have allowed for the possibility of organising production so as to generate scale economies, so that the Japanese could to pass on cost savings. More on these points later.

Obviously, securing lower prices on vital steel imports is a major attraction for the Chinese side. Casual examination of available evidence suggests the Chinese took full advantage of low prices. In periods when Minmetals had the upper-hand in price settlements, the volume of detailed monthly orders actually placed by Minmetals often exceeded original target volumes. Perhaps it is more than coincidental that when the Japanese forced slight price increases, actual purchases by Minmetals were considerably below target volumes. Evidence is presented later.

Price stability. There was a degree of predicability as to the likely price outcomes of each set of negotiations. Prices for each round of negotiations were usually settled as increases or decreases on the historic base provided by the previous round. Thus, prices could be expected to lie within a pre-determined range. In recent years, steel spot markets within China have become more volatile, so the Chinese may have viewed the stability of prices under the Sino-Japan framework in a favourable light.

Monopoly power. Minmetals gained monopsony negotiating power vis-a-vis Japanese suppliers. But there was also monopoly over supply of Japanese steel to downstream factory users in China itself. Minmetals had the power to pick and choose amongst Chinese customers. For example, in negotiations (March 1994) for supply of cold rolled stainless steel sheet for the 3 months May to July, Minmetals indicated that applications from Chinese domestic users amounted to 20,000 tonnes of material, but the eventual negotiating submission put to the Japanese were cut down to 14,400 tonnes. From that submission, the Japanese agreed to supply just 6,100 tonnes [YCHJ, May 1994: 13]. This suggests monopoly power for Minmetals.⁹

⁹ See Dickson [1996], under “canalisation” rubric, for general discussion of monopoly rents possibility.

As China's trading system has become more decentralised, the possibility increases that domestic buyers other than Minmetals will be able to approach Japanese factories for supplies of ordinary steel. Against this, Minmetals could claim (until recently) the ability to sit all six major Japanese producers down at one table at the same time. This ability would be a point of competitive advantage when tendering to supply a downstream Chinese user. Minmetals has claimed that if it had to "negotiate individually, it would 'lose face' with its customers" [MB, 17 Nov 1994].

Protection of domestic industry. When the joint talks arrangement was established in 1972, Minmetals was one of 12 national import and export enterprises with exclusive responsibility for managing China's foreign trade. These enterprises existed under close stewardship of the parent ministry (now MOFTEC). With China's foreign trade so concentrated, there was little question of loss of control with potential to disrupt domestic industrial development. Pre-1978, the central government had, to all intents and purposes, complete control over imports. Ironically, therefore, protecting domestic industry was not amongst the first considerations of Chinese leaders. Nowadays, the irony works in reverse! As relatively stringent barriers to trade were repealed during the 1980s and 1990s, this has concentrated the minds of officials on how to protect domestic industry. Canalising ordinary steel imports from Japan through just one state trading enterprise may make that flow more amenable to control by the government. For a discussion of "canalisation" as a mechanism to protect local industry, see Dickson [1996].

Administrative costs. Instead of negotiating with a plethora of Japanese suppliers, Minmetals need only conduct negotiations with effectively one trading partner, namely, the cartel under Nippon Steel's leadership. Moreover, negotiations were only undertaken twice per year. As a result, there were time, travel and administrative cost savings. When Japanese firms threatened to abandon the joint negotiations approach in November 1994, Minmetals staff claimed:

"among other things, that it would be impossible for them to familiarise themselves with the product catalogues of each Japanese steel company, and that the existing talks procedure was far easier and more satisfactory" [MB, 15 May 1995].

Minmetals was happy to leave “micro” decisions concerning “product catalogues” to Nippon Steel. This argument is prone to exaggeration, since from time to time, Minmetals undertook irregular negotiations with individual Japanese steel producers in order to procure extra supplies, so the trading house could not have been completely ignorant. But by and large, the coordinated approach to negotiations must have afforded administrative conveniences to both Minmetals and Japanese suppliers.

ADVANTAGES TO JAPAN.

Investment platform. In return for accepting lower prices, the patronage of a large export customer was thereby guaranteed (in recent years, China has consumed 20-30 percent of Japan’s annual steel output). The majority of investment in the post-war Japanese steel industry took place between 1955 and 1975. Large scale investments, including Kawasaki Steel’s Mizushima steel plant, Sumitomo Metal’s Kajima steel works, Kobe Steel’s Kakogawa plant and the Kimitsu and Oita steel plants which now belong to Nippon Steel, all took place after 1961 [Imai, 1980: 209]. As a result, when the original 1972 agreement with Minmetals was settled, it is possible that all the major Japanese steel producers still faced the task of generating minimum rates of return to refund financiers. This suggestion is also confirmed by Smith [1978: 243], who indicates that “Japanese companies have a very high ratio of fixed debt to equity in their financial structures”. Steel is an industry where due to huge capital sums involved, it is important not only to keep plant running at capacity, but also to find sales avenues for all output.¹⁰ The platform of production security introduced by formal trading arrangements with China may even help explain the success of the Japanese vis-a-vis other national steel industries. For example, Imai has described how Japan emerged during this period to “monopolise the most up-to-date blast furnaces in the world,” and “in less than twenty years, Japan and the United States

¹⁰ Also confirmed in Smith [1978: 243]: “Often, plants are designed to run at, or near, full capacity and must be shut down if this cannot be achieved. The costs of shutting down and restarting capital structures such as coke ovens or smelting pots may be very much greater than the interest charges on the idle capital”. Another interesting contention holds that the need of some producers to run plants at full capacity, selling all output to generate minimum required returns, leads these producers to prowl export markets for opportunities, underlying the issue of dumping at the heart of negotiations for a new Multilateral Steel Agreement (MSA) [SJD, 19 Feb 1996].

had reversed their positions in steel production” [1980: 192]. Guaranteed sales to China may have helped underpin the enormous capital investment at the heart of this technical reversal.

Market share. The negotiations framework helped the Japanese cartel carve out a sizeable proportion of China’s steel import market (see FIGURE 2, page 25). Arrangements gave the Japanese an in-road not available to competitors. Furthermore, trade barriers and licensing arrangements applicable to China’s trade regime for steel products were less relevant to the Japanese, their trade being covered by special arrangements.

Price discrimination. Japanese producers would have considered Chinese long-term price elasticities of demand. Third degree price discrimination is a possibility, at least to the extent that Japanese steel producers had international market power. However, one typical form of third degree price discrimination is not applicable here. *Absorption of freight costs* (by the exporter) is sometimes undertaken with respect to more distant export markets, due to alternative, more proximate, sources of supply available to buyers in those markets. But in the present case, the Japanese producers actually offer lower prices to geographically closer China, whilst giving no discounts to more distant SE Asian markets. Nonetheless, this does not discount the possibility of price discrimination by the Japanese based on judgement of long-term demand elasticities in China. For example, a strong desire in China to develop domestic sources of supply might be one reason for according higher price elasticities to China than, say, SE Asia. The Japanese may prefer to see China depend on Japan for segments of steel supply,¹¹ and thus be prepared to offer lower prices.

Administrative convenience. As with Minmetals, the Japanese gained administrative and organisational benefits from the joint talks framework. For the Japanese (for that

¹¹ A preference the Japanese may have maintained even at the same time as providing considerable technical assistance to on-going development of the Baoshan steel project, the single most important effort to improve China’s flat product self-sufficiency.

matter, in many business transactions), “cutting large deals with a single party has long been considered a way of saving time and effort” [NW, 15 Aug 1994].¹²

Market Risks. Smith [1978] explains how circumstances encouraged Japanese producers to enter into long-term contracts with Australian raw material suppliers. One problem with long-term fixing of input prices and quantities is that they leave the Japanese producers exposed in the event of falls in output prices. Just as financial entities seek to balance portfolio risks by taking offsetting positions, the Japanese steel mills may have sought to establish offsetting long-term contracts on the output side. In practice, contracts with Minmetals, which were non-committal in terms of quantities, and for which prices were renegotiated each half year, may have only provided a partial offset to relatively fixed, long-duration contracts with raw material suppliers.

Credit risks. Views of risks attending trade with China played an increasing role during the 1980s and 1990s in reinforcing the Japanese relationship with Minmetals. Even if relaxed trade restrictions gave Japanese steel mills new opportunities to sell to domestic Chinese customers directly, the mills would be circumspect about exploiting such opportunities due to the credit risks involved. There are advantages to having Minmetals as an intermediary. Minmetals was better able to shoulder default risks of domestic customers. For example, Minmetals could demand mandatory deposits on import orders for domestic customers [MB, 8 Nov 1993]. Both Minmetals and domestic customers were *Chinese*, so domestic remedies could be used to resolve disputes involving those customers. In contrast, if the Japanese were embroiled in direct dispute with Chinese end-users, the parties might have to resort to expensive, specialist trade arbitration, or else resort to litigation in China, with the risk that Chinese courts were biased against foreigners [MB, 3 Apr 1995]. These problems were avoided, because the one and only Chinese concern the Japanese producers dealt with was a sound, long-established, government-backed entity, since 1950 the back-

¹² On the other hand, “the Japanese had long been grumbling about ... the enormous amount of time -on occasion, six to eight weeks- that Minmetals required in order to reach a satisfactory conclusion on tonnage and price while in recent years other Chinese buyers outside Minmetals’ sphere had been

(cont.→)

bone of China's ferrous metals trade: "Minmetals is treated with considerable respect by the Japanese because it can and does deliver" [MB, 13 Jan 1994].

Organisation of production. "The collusive trading system enabled the six [Japanese] companies to quickly and efficiently formulate production plans for eight types of steel product needed by China" [DY, 5 Jan 1995]. By allocating production tasks amongst themselves ("dividing up the cake"), the Japanese firms were able to exploit organisational and scale economies, as well as the marginal cost advantages of particular factories.¹³ To take a mock example, one firm might produce 100 percent of 1mm specification product required, whilst another firm took over responsibility for meeting the entire allotment of 3mm specification (instead of both firms producing a fraction of each). Such a division of labour could increase the size and scale of production runs and avoid production delays, for example by reducing the need to regig machinery before each new batch. The result was that the Japanese were able to produce at relatively lower cost, and therefore charge Minmetals relatively low prices, than for the smaller volume orders from third countries (such as SE Asia). *This cost relationship is the bed-rock of the Sino-Japan steel trade framework.* The large volume orders brought to the table by Minmetals on the one side, coupled with the organisational cooperation of the Japanese producers on the other, allowed the two sides to generate a bargain-able surplus. The presence of this surplus meant that the two sides, Minmetals and the Japanese, preferred dealing with each other rather than with third parties. The caveat, of course, is that both sides had to benefit from the surplus. From recent revealed behaviour, it is apparent that most of the cost savings, and hence surplus, were passed over to Minmetals, to the extent of falling below some minimum critical threshold level for the Japanese. Under these circumstances, the Japanese reduced their supply to Minmetals.

The explanation above suggests that cost advantages were gained by matching particular steel mills with particular production tasks. For example, a mill might take over the entirety or the greater part of production of a particular variety. However, it

expressing a willingness to pay top prices for prompt service" [MB, 13 Mar 1995]. This suggests some administrative and time *inconvenience* to the Japanese.

may be asked, if certain steel mills had production advantages in particular product types or specifications, why did they need a cartel to help them exploit these advantages? Why not simply exploit marginal cost advantages in open competition? The answer may be that for the ordinary steel specifications under negotiation, *there were no discernible comparative or cost advantages*. Each mill was as good as the other for any of the products concerned. Thus, no steel producer was willing to enter the market individually with certain knowledge that it could campaign on a particular product line. Only through cooperational arrangements could an essentially arbitrary division of labour be made so as to take advantage of average cost reductions.

Production forecasts. The formalised negotiations framework assisted in forecasting Chinese purchases.¹⁴ As indicated previously, the twice-yearly negotiations settled not just prices, but also indicated the broad amount of purchases. This provided assistance to the Japanese in determining how to allocate factory time and plan production. It might also provide a guideline for the Japanese when making raw material purchases for iron ore and coal. In essence, the joint talks framework provided six-month forecasts of future quantities, which whilst not contractually binding, nevertheless had strong foundation as well as “official imprimatur”, therefore providing a degree of certainty unmatched by looser business relationships. That, at least, was the theory.

GROWING JAPANESE DISSATISFACTION.

For approximately 23 years, the negotiations framework was supported by both Japanese and Chinese sides, as evidenced by its longevity. The Chinese continue to be strong advocates, as affirmed by the published viewpoint of the steel products chapter of the China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exports [GJSB, 29 Nov 1994]. However, Japanese support waned. There may have been feeling amongst the Japanese majors that the system did not

¹³ However, in regards perceived cost advantages of different factories, see text below.

¹⁴ Given the large proportion of output consumed by China, this would in turn enhance ability to forecast total demand.

work to plan, with supposed benefits failing to materialise. A more detailed explanation of possible factors behind the decline in Japanese support is as follows.

Shock orders. TABLES 2 and 3 provide details, based on evidence available in media reports, of recent Minmetals orders placed with the Japanese. Sizeable fluctuations in volumes are apparent. Exports surged dramatically during the first half of 1993, but then plummeted during the second half. A press statement from Nippon Steel almost boasted about export orders from Minmetals of 3.93 million tonnes achieved for the six months to end July 1993. Included in this period, the order received on 24 February 1994, for supply in April, alone amounted to 827,000 tonnes of ordinary steel [YCHJ, May 1993: 65]. Thus, when orders fell to 1.09 million tonnes for the period August 1993 to January 1994, Japanese dismay must have been palpable. The last two orders for the second half of 1993 stood at merely 79,000 and 81,000 tonnes.

The reverse was experienced in early 1994, with orders received from Minmetals being much larger than originally negotiated. On 31 March 1994, Nippon Steel announced that a “shock” order of 454,000 tonnes of ordinary steel product had been received from Minmetals, a 48% increase over the previous month, creating doubts amongst industry analysts as to the capacity of the Japanese mills to supply. Although much larger orders had been catered for during the first half of 1993, by this time the Japanese had begun to re-orient production capacity to take advantage of higher SE Asian and domestic prices.¹⁵ Due to these constraints, the Japanese majors agreed to supply 300,000 tonnes in May, postponing the remaining 154,000 tonnes until subsequent months [NKS, 7 Apr 1994].

Roll-a-coaster Chinese orders generated a Japanese reaction. There was initial relief at the pick-up in orders in early 1994, a return to health after pathetically low volumes at the end of 1993. It is fair to say that so long as domestic and world steel markets remained depressed, Japanese producers welcomed large if unexpected orders from the Chinese. On the other hand, particularly as domestic and third country markets recovered, the volatility of Minmetals’ orders appears to have become a source of

irritation to the Japanese mills. As indicated, there was difficulty in fulfilling May 1994 shipments. The mills were heartened by the strong swing back to healthy levels, but wanted to avoid another roll-a-coaster ride. As a result, they requested that “Minmetals’ requests are stabilised” [MB, 7 Apr 1994]. The mills hoped that “monthly exports to China will stabilise at over 300,000 tonnes in and after May” [NKS, 3 Mar 1994]. If not achieved, and if an atmosphere of volatility ensued, some of the organisational and production advantages that accrue with stable and consistent large scale orders would diminish.

Unexpected fluctuations in orders can create a number of problems. Producers need to generate predictions so as to plan production and allocate time between customers. If the broad quantities established in the bi-yearly negotiations were supposed to provide a useful forecaster, then in recent years, the target was clearly not fulfilling its role. For example, Minmetals and the Japanese cartel set a target of 2.4 million tonnes for the period August 1993 to January 1994, but eventual volume was 1.09 million tonnes. However, in the first quarter of 1994, the reverse was true, with export orders at least 255,000 tonnes more than originally planned [YCHJ, Feb 1994: 10]. By April 1994, reports indicated that orders placed by Minmetals exceeded the amount originally agreed upon by 600,000 tonnes. Although it may seem that a larger order should be considered a bonus, in fact, it may have created scheduling, logistical and purchasing problems for the Japanese. The final result would be a budgetary “variation” and perhaps even a penalty. There can also be human-relations repercussions to the paradox of having “too much business”. Large orders may have created tension between Minmetals and its Japanese suppliers because Minmetals staff felt they were doing the Japanese a favour by providing extra business. The Japanese, for their part, would feel they were doing the Chinese a favour by making efforts to meet extraordinary orders. As a result, a clash of feelings in terms of “who owes who” an obligation may ensue.

Prices and quantities. During 1994, the Japanese began to emphasise prices over quantities. The large quantity for low price trade-off was no longer so acceptable. It

¹⁵ See also discussion under header “*prices and quantities*”.

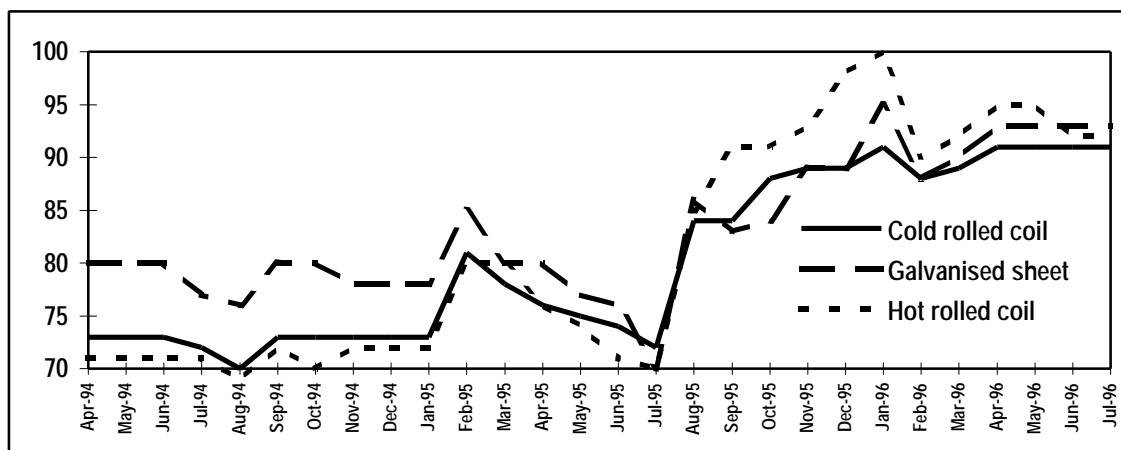
was argued on page 16 that the Japanese were willing to supply Minmetals at low prices because cartel distribution of the large quantities involved allowed cost savings to be achieved. By transacting with each other, Minmetals and the Japanese could generate a surplus, division of which would be settled through bargaining. At least part of this surplus would pass to Minmetals in the form of price reductions. However, it is necessary to note the *minimum price bound* acceptable to the Japanese. At minimum, the Japanese producers would require the same accounting margins over cost that could be achieved in trade with third countries, such as in SE Asia. Otherwise, it would simply become more profitable to move production over to satisfying those third markets.¹⁶

Historically, prices negotiated with Minmetals would have been above the lower price bound. Problems begin, however, when third country steel prices begin to rise. This situation will lead to rises in accounting margins for those countries, so if margins earned on trade with China are to keep pace, prices associated with selling to Minmetals would also have to rise. If Minmetals prices are sluggish in response, they may be eclipsed by the rising minimum price bound. Ultimately, the extra-surplus available to the Japanese by trading with Minmetals will shrink, and may even become negative. The marginal returns to supplying Minmetals will be less than those achievable from third markets (SE Asia). Faced with this situation, the Japanese steel cartel could respond in a variety of ways. Firstly, it could shift production away from China to the more lucrative SE Asian markets. Alternatively, it could continue unadjusted supply to Minmetals, shouldering the margin reductions involved, in the long-term interest of preserving the negotiations framework. This approach will, however, yield its fair share of tension between the two parties. Finally, the Japanese could make strenuous efforts at the negotiating table to win price increases from Minmetals, in order to maintain pricing parity with SE Asian markets.

¹⁶ The Japanese producers would need to take price elasticities into account. If they simply switched out of the China market and dumped their whole production on SE Asia, this would depress prices achievable in SE Asian markets. For this reason, even if sales to China were not as profitable as for other markets, there would still be a non-zero optimal level of sales to the China market.

The scenario described above is in fact an exact description of recent realities. Domestic Japanese, SE Asian and international steel prices generally, were all rising relative to prices offered by Minmetals. An indication of the difference in prices for respective markets is provided in FIGURE 1 below.¹⁷ To the extent that Minmetals prices rose in February and September 1994, as well as February 1995, they barely maintained parity with international prices. To see this, recall that each new set of prices would apply over a six month period, from February to July, and then August to January the following year (however, in 1994, the second period lasted started in September and not August, as discussed below). Hence, if international prices stayed static, FIGURE 1 could be expected to show a series of straight horizontal lines, each lasting six months. Instead, the reality has been that after an initial rise at the start of each six-month block, relative prices earned by the Japanese deteriorated thereafter. Interestingly, FIGURE 1 also demonstrates that the pattern changed dramatically after July 1995, the last month for which the Japanese supplied steel under the joint negotiations arrangements. Ending those arrangements seems to have enabled the Japanese to dramatically improve their pricing parities. Pre-July 1995 prices for steel sold to China stood at around 70-75% of prices for Japan's other export markets, whereas post-July 1995, the ratio has been in the vicinity of 90%.

FIGURE 1. *Sino-Japan contract prices as a percentage of third country export prices.*



Source: TABLE 3 at end of text.

¹⁷ Unfortunately, pre-April-1994 data is not available.

The Japanese responded to these price differentials in precisely the ways outlined above. Production allocated to the China market was cut (certainly, at least, after the heady volumes of February 1993 to July 1994), and that devoted to domestic and third country markets rose. See TABLES 1 and 2 for an indication of the former aspect. There are also other, more direct indications that the Japanese companies sought to cap quantities going to China. For example, the Japanese producers stated they would limit exports to China to 250,000 tonnes per month for last-half 1994 [NW, 15 Aug 1994]. There was particular dispute between Minmetals and the Japanese steel-makers in September 1994 when Minmetals demanded additional supplies of hot rolled coil (beyond a tacit quota of 80,000 tonnes for that product variety). The previously mentioned fact that Japanese producers had trouble meeting shock orders during first-half 1994, when they had easily fulfilled much larger orders for the first part of 1993, also points to the shifting of production capacity away from China.

At the same time, the Japanese never considered abandoning sales to Minmetals altogether. Nor did they seek to change the institutional framework under which these sales were negotiated, at least for the time being. Instead, the Japanese made efforts to close growing pricing disparities by seeking price increases from Minmetals. These efforts are described in the following sections.

NEGOTIATING ROUNDS.

November 1992. Minmetals officials arrived in Tokyo on 8 November 1992 for negotiations for first-half 1993 steel shipments. Negotiations were completed in 26 days, the shortest time ever recorded in the history of the Sino-Japan steel framework [YCHJ, Jan 93: 38]. The speed of negotiations was assisted by prior consultation and exchange of views by both sides. The relatively quick conclusion was also a consequence of depressed world steel demand at the time (China was the exception). Therefore, the Japanese, under the leadership of Hiroki Sasaki of Nippon Steel's first export department, did not resist Chinese demands. They hoped that in exchange for low prices, Chinese orders would be reasonably large (facilitating production economies and cost savings, so that the Japanese might maintain surplus levels even in the face of price reductions). Although Minmetals did not publicly disclose specific

volumes, the company indicated that proposals before the negotiating table “really did represent an increase in steel import volumes”, and furthermore that “the Japanese side possess competitive strength in supplying large steel volumes, so it would be ‘no problem’ if they wanted to increase their export amounts to China” [YCHJ, Jan 93: 38]. As it turned out, eventual orders placed by Minmetals exceeded all expectations. Originally, supply of approximately 1.1 million tonnes was agreed upon for first-half 1993. Ex-post statistics show the final amount was 3.93 million tonnes. Minmetals had taken advantage of relatively cheap prices to procure extra-ordinary volumes from Japan. Had the Japanese firms known in advance the ultimate strength of Chinese demand, they might have insisted on higher prices.¹⁸

May-June 1993. Negotiations for August 1993 to January 1994 supplies commenced on 12 May 1993. Minmetals entered into negotiations requesting 10% price cuts to counter the effects of declining RMB value against the US dollar. On the other hand, the environment was one in which prices for Japan’s third markets, particularly SE Asia, were rising. Therefore, the intention of the Japanese was to seek price rises of around 20%, so as to maintain pricing parity. Press reports indicate that the Japanese proposed price increases of between \$20 and \$30 per tonne, whilst “crimping tonnage by about 200,000 tonnes over the six month period” [MB, 23 May 1993]. As previously noted, the six Japanese firms tried to imposed limits on China exports to ensure ability to cater for improving third-country markets. Their insistence on higher prices was bolstered by several additional factors, including: (1) Expectations that strong Chinese demand would continue. (2) Korean steel producers (POSCO) were also insisting on price rises from Minmetals [MB, 10 Jun 1993], thus limiting China’s ability to turn to alternative suppliers. The final outcome was that the Japanese side secured price rises, but not of the desired magnitude. Volume targets also fell, from 3.93 million tonnes realised during the previous period, to a target of 2 millions tonnes. The Japanese may have felt comfortable with this target, but were dismayed when tonnage actually ordered by Minmetals plummeted, especially in December and

¹⁸ It is important here not to confuse (1) lower prices that the Japanese can offer by exploiting economies associated with large orders, and (2) price increases that the Japanese might seek to gain by judging Chinese demand elasticities. Whilst large orders and cartel production arrangements generated
(cont.→)

January (see TABLE 1). *Ex-post* volumes for August to January amount to less than 1.1 million tonnes, well down on the target.

November 1993. Negotiations commenced at a time when SE Asian steel prices remained at high levels. Pricing disparities continued to vex the Japanese exporters. They also believed, despite falls in order volumes from China, that underlying Chinese steel demand remained strong [MB, 8 Nov 1993]. In Beijing on 27 November, the Japanese offered to supply Minmetals 1.5 million tonnes of steel over six months (250,000 tonnes per month), “but in parallel with this they are asking for double digit price increases.” [MB, 6 Dec 1993]. Their claim met with a flat response, on 29 November, with Minmetals’ counter-proposal of price decreases. Contemporary reports stated that negotiations would be “tough”. Because offers on price were far apart, “it would be difficult to conclude negotiations by the end of the year” [YCHJ, Dec 1993: 14]. In fact, negotiations concluded on 20 December 1993. Price increases were agreed to for only a small proportion of the products under negotiation (mainly sheets and plates), whilst for other products (wire rods and high tensile bars) prices stayed static or even fell. In effect, the Japanese deferred demands for price rises. The Japanese side later claimed that acceptance of price cuts had been “against their will” [YCHJ, May 1994: 13]. Chinese bargaining strength was assisted by lower than expected import volumes during the previous period. This lent credibility to the current (February to July) target of 1.1 million tonnes. The target represented zero increase over previous period, warning Japanese producers that large price increases would not be tolerated. In fact, following previous patterns, the actual outcome was that Minmetals took advantage of low prices to place larger than originally agreed orders (approximately 1.8 million tonnes).

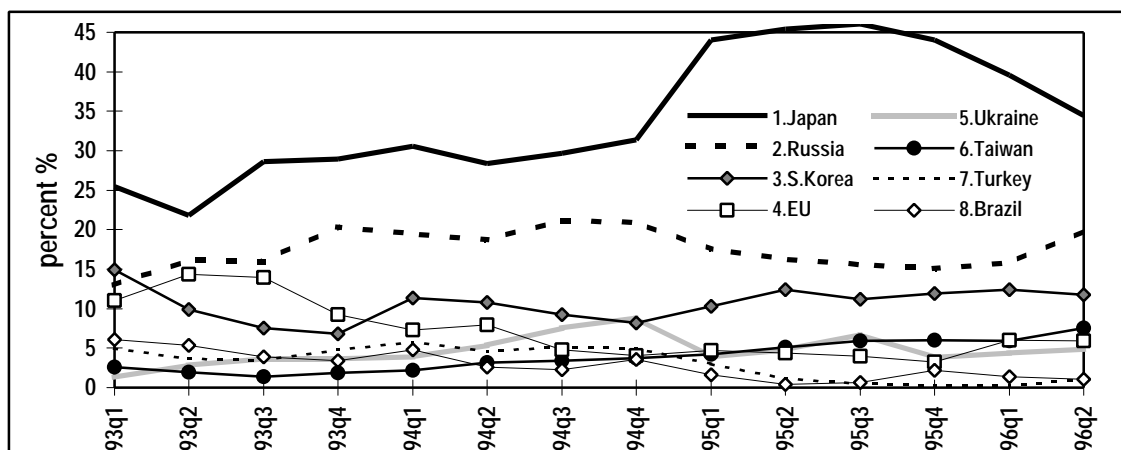
Breakdown in May-June 1994 negotiations. By May 1994, Japanese producers felt mounting frustration at the inability to bridge the gap between SE Asian and Chinese prices. The difference was in the order of “hundreds” of US dollars [YCHJ, Jun 1994: 10]. Japanese reports said the discrepancy increased during the first part of 1994

a cost-saving surplus, the Japanese would nonetheless seek to win over a larger proportion of the surplus for themselves.

[YCHJ, May 1994: 13]. The Japanese may also have been annoyed by a pattern under which Minmetals would place larger than expected orders when prices were favourable but lower than negotiated orders when the Japanese had won price increases. A cap on exports to China at no more than 250,000 tonnes per month would help prevent prospects of “being taken for a ride” (whether deliberate or not) and would also preserve capacity for more lucrative export opportunities elsewhere.

The Japanese side was encouraged by a number of factors. Sustained vigorous international steel demand meant that alternative suppliers would be limited in their ability to supply China. For example, European suppliers were reducing exports, and domestic demand was increasing in both Brazil and South Korea. Korea’s ability to supply was also constrained by repair of blast furnaces at POSCO mills [YCHJ, May 1994: 13]. The Japanese considered that declining sources of alternative supply dictated that “China would increasingly rely on imports of steel from Japan, so the Japanese side considers this to be a good opportunity to increase prices” [YCHJ, May 1994: 13]. FIGURE 2 shows that Japanese predictions were not far off the mark. For instance, during the course of 1994, the shares of China’s steel import market held by Brazil, South Korea and EU countries did experience some decline. In contrast, after the second quarter 1994, Japan’s share increased, topping 45% of the market in 1995.

FIGURE 2.
Quarterly shares of China’s steel import market held by 8 largest supplying countries.



Notes: Based on Harmonised System chapter 72: Iron and steel. Country rankings based on average quarterly share (93 Q1 - 96 Q2). The 9th and 10th largest supplying countries are USA and Kazakhstan respectively. Source: China’s Customs Statistics.

For their part, the Chinese demanded price cuts.¹⁹ Diametrically opposed positions guaranteed that the May 1994 negotiating round, for August 1994 to January 1995 shipments, would be difficult. Both sides anticipated this difficulty. In previous negotiations rounds, only one session per day was held, but for the current round two daily sessions were scheduled, in both mornings and afternoons. Negotiations began on 16 May in Beijing, lasted 53 days, only to break down in late June. Japanese negotiators (again led by Hiroki Sasaki of Nippon Steel's export division) returned to Tokyo by 28 June. This was the first time in the history of the Sino-Japanese steel framework that the negotiations had collapsed [NKS, 28 Jun 1994]. A consequence was that Minmetals was not ready to place orders with the Japanese firms in time for delivery in August 1994. The result was that eventual deliveries for second-half 1994 lasted only five months and not six, commencing in September instead of August.

Negotiations were eventually resumed on 13 July, and agreement basically achieved by 20 July [YCHJ, Aug 1994: 8]. The Japanese side secured moderate price increases, with the smallest price rise (wire rods) being more than \$10, and galvanised plate rising by approximately \$20 per tonne. But even after this agreement, the Japanese producers were not satisfied. Price rises were approximately 5% on average, but the Japanese had been demanding 10% rises [NW, 15 Aug 1994]. According to Hiroki Sasaki: "Frankly speaking, the latest export price hike was not large enough" [NW, 15 Aug 1994]. The Japanese emphasised that prices for steel sheet exported to SE Asia had increased by \$20-30 per tonne for the July to September period, and predicted that SE Asian prices would rise again by October [YCHJ, Aug 1994: 8], so that even considering price concessions made by Minmetals, the Japanese would be hard pressed to close the disparity. FIGURE 1 confirms that the discrepancy between Chinese and third export market prices stayed static pre- and post-September 1994. September shipment prices had arrested the dip in the middle of the year, but price relativities had really only returned to their pre-June levels.

¹⁹ Chinese demands were typically based on exchange rate considerations. Ironically, on occasion it would be possible for both sides to simultaneously claim adverse exchange rate movements if contract prices were denominated in US dollars.

On-going dissatisfaction of Japanese cartel members had a number of consequences. One was that when Minmetals demanded extra shipments of hot-rolled coil for October, the Japanese considered this would breach their cap on exports to China. They were willing to supply extra hot-rolled coil to China only if accompanied by further price increases. Otherwise, production capacity would remain geared to more lucrative markets elsewhere. Initially, Minmetals would not agree to further price rises for extraordinary amounts, and deadlock over quantities caused delay in shipments for the October period [MB, 5 Sep 1994]. Ultimately, Minmetals dispatched executives to Tokyo to discuss the provision of extra materials [MB, 5 Sep 1994]. However, the altercation proved to be the last straw for the Japanese. A consequence of Japanese failure to obtain satisfactory price rises was deeper consideration by the Japanese majors about whether in fact the Sino-Japan steel negotiations framework was in their basic interest at all.

PRESSURES ON THE CARTEL.

Internal pressures. One possible explanation for the break-up of Sino-Japan trading arrangements centres on divergent interests amongst members of the Japanese steel-makers' cartel. Concrete evidence about the pattern of internal interests is lacking. However, it seems the benefits of membership were not spread equally. Net benefits of the system were said to vary according to size and profit level of member companies [MB, 14 Aug 1995]. Ben Smith argues, with reference to Japanese steel mill purchases of raw materials, that the cartel may be:

“dominated by a single major firm, which is inefficient by comparison with the other firms in the cartel. The dominant firm may then use the cartel to maintain a market share which, under competitive circumstances, would be eroded” [1977: 46].

Smith goes further to suggest (tentatively) a candidate for the dominant, inefficient firm: “the Japanese steel mills' consortium tends to be dominated by Nippon Steel” [ibid.]. TABLE 4 presents parent-company gross profits for the 6 Japanese cartel

members.²⁰ The steel mills made the decision to end coordinated selling to Minmetals during the financial year to 31 March 1995, and the medium term outlook would also have influenced their decision. However, the data as presented in TABLE 4 do not provide any evidence of Nippon Steel in the dominant *inefficient* mould. For March 1995 results, Nippon Steel's gross profit results were in the top band, and in fact, whilst not shown in TABLE 4, the only companies to make positive recurring and pretax profits for that year were Nisshin and Nippon Steel. This does not discount the possibility that in previous years Nippon's performance was inferior to the others, heightening the attractiveness to Nippon of the Sino-Japan arrangements. If Nippon Steel's performance subsequently experienced a relative improvement, its support for the arrangements may have ebbed, which may help explain their eventual abandonment.²¹

The strategy pursued by a dominant inefficient player would be use cartels to enforce output price increases, so as to prevent undercutting by more efficient companies. Likewise, in procurement of raw materials (such as coal and iron ore from Australian suppliers), the dominant inefficient firm would use the cartel to restrict purchases in an attempt to reduce input prices, thus enabling margins to be maintained. However, Nippon Steel's behaviour has been precisely the opposite. For instance, some cartel members objected to price settlements that Nippon Steel, as champion negotiator, achieved in negotiations for procurement of coal and iron ore [MB, 14 Aug 1995]. The mills believed Nippon Steel too easily acceded to price increases for Australian suppliers. Likewise, in negotiations for sales to China, some mills were dissatisfied at Nippon Steel's "willingness to accommodate Minmetals' demands" [MB, 17 Nov 1994]. If anything, these signals suggest that it was not the dominant firm (Nippon) which was inefficient, but rather, some of the smaller complainants. Indeed, a report produced by stockbrokers Potter Warburg Securities on the collective buying system (CBS), through which the Japanese mills secured coal and iron ore from Australia producers, suggests that the system disproportionately benefited weaker cartel

²⁰ Gross profit is a better indicator of manufacturing efficiency than recurring or pretax profits, because the latter may include extraordinary or unrelated financial transactions.

²¹ A note of caution in interpreting relative profit results in TABLE 4 is that the results may in themselves reflect *ex-post* benefits of the cartel arrangements to various firms.

members, and NKK is specifically named. Furthermore, the report argues that “the CBS is also beginning to limit the ability of the strongest members of the Japanese steel mills to profit from their stronger margins”, because:

“Restrictions on availability of premium coking coal in Japan might well limit the ability of companies such as Nippon Steel to press home their full competitive advantage by enhancing their market share in either domestic or export markets” [Lancaster, May 1995: 5].

Parallel developments may be occurring with regard to sales arrangements with China. Thus it seems that the actual story is that the dominant player, Nippon Steel, no longer had reasons to support the steel cartel. Far from being inefficient, Nippon Steel was one of the more competitive firms, and no longer felt it necessary to give weaker rivals a helping hand. Just as Nippon’s dominant sway helped maintain the joint negotiations framework, now it may have helped bring about the system’s demise. In any event, the internal dynamics of the steel cartel, at least in respect of sales to Minmetals, remain unclear. But this is not to deny the strong probability that internal Japanese frictions were an important factor behind the dissolution of the China negotiations framework.

External pressures on the steel cartel. The official reason provided by Japanese cartel members for dissolving the long-standing arrangement with Minmetals was that the arrangement was liable to the charge of being anti-competitive. Reportedly, Japan’s Fair Trade Commission (FTC) had asked the Ministry of International Trade and Industry (MITI) to request that the steel firms stop their practice of coordinating negotiations with Minmetals [MB, 22 Dec 1994]. It is true that in recent years new attitudes have emerged in Japan about (1) economic deregulation and (2) the role of anti-trust laws. Nonetheless, there is scant evidence for believing that Japanese authorities were overwhelmingly concerned by the arrangements with Minmetals. Rather, it seems that cartel members themselves initiated most of the questioning! This self-inflicted move provoked its own suspicions. Such was Minmetals’ disbelief that it indicated it would “dispatch a delegation to visit MITI to seek clarification from the Japanese ministry” [MB, 17 Nov 1994]. In reality, the reason why Japanese firms sought to change their relationship with Minmetals may have much more to do with frustration at inability to achieve price rises. The strategy involved remains unclear,

but the observed behaviour reveals that looser arrangements, under which each cartel member had latitude to strike individual deals with Minmetals, may be helpful to the cause of price rises. Perhaps these firms wanted to jolt, warn or penalise Minmetals for lack of cooperation on price questions during recent years.²² The other reason for suspecting that the “anti-trust” explanation proffered by the Japanese firms is not the whole story is that these firms continue to engage in collusive behaviour elsewhere. Examples include (1) the alleged “East of Burma” agreement mentioned on page 4, (2) continuing coordination of steel pipe sales to Russia, and (3) the collective buying system for raw materials [see *MB*, 22 Dec 1994].

American objections? Students of the Japanese economy sometimes compare implementation of anti-trust laws in American and Japan. American criticism of *keiretsu*, of tie-in-sales, of restricted distributional networks and the like, especially in so far as these relationships constitute informal trade barriers, are by now well known. The American Iron and Steel Institute has also directly criticised the Japanese steel majors for collusive behaviour. See, for example, reported comments of its vice chairman, Robert Grow [*MB*, 22 Dec 1994]. In this respect, American criticisms relate in the first instance to openness of the *Japanese* market. But there is also evidence that American steel producers are concerned about access into the China market.²³ In particular, under the 1992 US-China Memorandum of Understanding (MOU) on Market Access,²⁴ China agreed to de-license, commencing 1 January 1994, 345 steel product tariff lines. In discussions with First Secretary Economic at the US Embassy in Beijing in early 1995, the author asked why access for steel products was of particular concern to the US as America would not be the first country to benefit

²² If the theory espoused here that cartel organisation enabled cost reductions is correct, then individual, uncoordinated contracts with Minmetals would inevitably mean production cost increases. This may force Minmetals to pay higher prices. Whether it results in higher profits for the Japanese producers is another question. However, at minimum the Japanese know that operating as individual producers at higher costs, threats to undercut each other to the extent of maintaining prices to Minmetals at pre-existing levels would not be credible. As well, the Japanese producers had commonly expressed dissatisfaction with margins achieved from Minmetals. Nippon Steel was said to be the most accommodating of the six, and by mid-1994 even it was making its dissatisfaction clear. Thus, the Japanese producers would have grounds for considering that individual competition would not drive profit margins any lower than those already achieved from Minmetals.

²³ Concern about foreign market access appears to contradict a widely held view that American steel producers are purely parochial, uninterested in international trade, merely concerned to protect their own turf through anti-dumping actions.

from steel import liberalisation, and steel did not seem an important part of the Sino-American trade relationship. The reply was that market access demands put by the US Trade Representative often reflected complaints made by American companies “in the field”. If US steel mills had indeed been lobbying the USTR for improved access to the China market, then they may also be concerned about the preferential access afforded to Japan through the negotiations framework with Minmetals. Indeed, one report indicates that “US steel industry leaders had recently started to complain about the [Sino-Japan] system” [DY, 5 Jan 1995].

DECENTRALISATION OF CHINA’S IMPORTS.

For many years, Minmetals was the only trading organisation authorised to import steel, a fact which impressed Japanese exporters. Special relations with the sole procurement agency gave the Japanese steel firms an entrée not available to competitors. However, in recent years, China’s trading system has undergone a measure of deregulation and decentralisation, prompting the Japanese firms to re-evaluate their attitude towards Minmetals. There are in fact two issues at work. Firstly, the *tacit agreement* was that the Japanese steel-makers would sell exclusively to Minmetals, and would not entertain other buyers from China. The question facing the Japanese was whether they should continue to honour this understanding. Secondly, if they choose to break this agreement, to what extent would China’s trade laws permit new customer relationships to be developed?

It must be emphasised that trade decentralisation in China has been uneven. China runs a highly segmented trading system, with numerous different customs regimes.²⁵ Assessment of China’s trade restrictiveness depends on the customs classification at

²⁴ See Dickson [1996] for a discussion of the MOU.

²⁵ Chinese customs material shows that in 1996 there were 16 different customs classifications. In terms of total import value, “processing with imported materials” was the most important category, “ordinary trade” the second most important, followed by “equipment and materials investment by foreign invested enterprises”. See Naughton [1996] for a discussion of the significance of the segmentation or “bifurcation” of China’s trading regime. It is worth noting that China is making attempts to unify its fragmented trading system, for example, through phased withdrawal of border and barter trade regimes. Reductions in concessions to foreign invested enterprises also fit this trend.

question. Here, the effects of deregulation are assessed in terms of division of imports into two broad categories: (1) *ordinary trade*²⁶ and (2) *concessional trade*.

Ordinary trade. In a nut-shell, ordinary trade is the ability to sell goods to China for domestic sale, without any processing or export requirements. It is therefore one of the more interest categories from a strict market access perspective. Unfortunately, ordinary trade is also amongst the most restrictive of China's customs categories. Ordinary trade is typically beset by requirements for licensing, registration and canalisation [Dickson, 1996]. However, one deregulatory milestone was the de-licensing of steel trade in January 1994.²⁷ Although for many years import licenses had been granted to a range of concerns besides Minmetals, until 1994 trading house was remained the major recipient. Minmetals would stand out amongst those eligible to hold licenses by virtue of status as the original importer, direct affiliation with MOFTEC, superior contacts and resources, not to mention deep experience and knowledge of the trading system. In practice, allocation of licenses was not equal, and Minmetals had the inside running. Thus, when the abolition of licensing was announced on 5 January 1994, Minmetals was the reciprocal loser.

Industry sources suggest that the removal of licensing effectively meant that *any* customer, including factory enterprises not officially approved to manage imports, would be able to engage in international trade [MB, 13 Jan 1994]. This may indeed have been the case for a period during 1993 and 1994. However, in August 1994, China's supreme governing body, State Council, issued a circular requiring that this situation be "rectified" [Dickson, 1996]. On 22 June 1995, MOFTEC published regulations limiting the number of trading houses allowed to import steel under the "ordinary trade" classification to a total of 58. Further confirmation is provided by industry sources who reported that:

"Tightening control over imports, which were in danger of moving out of control, and much to the irritation of government included long products which could be produced within China, are thought to be one of the reasons why last June over 20 Chinese companies were stripped of their import trader

²⁶ As distinct from *ordinary steel*!

²⁷ Although "registration" was introduced some months later to replace licensing. See Dickson [1996].

status. This reduced the number of authorised importers to 55 and Minmetals remains the dominant player” [Millbank, Jan 1996: 10].

It is also true that exclusive privileges enjoyed by Minmetals with respect to imports from Japan were bolstered in November 1994 by a declaration from the China Chamber of Commerce for Minerals, Metals and Chemicals Importers and Exporters that no other Chinese import agencies must initiate negotiations with Japanese steel suppliers [*GJSB*, 29 Nov 1994]. Thus, if Japanese firms had expected that de-licensing would open the way for a greater variety of Chinese customers to place direct steel orders, they may not have anticipated the reaction of Chinese authorities in reinforcing canalisation.

Concessional trade. Ordinary trade is by no means the largest component of China’s imports. In value terms, ordinary trade only amounts to around 30% of total imports. Alternative trading regimes, with less pronounced trade barriers, make up the rest. Some examples are as follows. Firstly, the role played by foreign invested enterprises in expanding both exports *and imports* is by now well known. Secondly, newspaper articles highlight the importance of outward processing schemes in expanding imports of steel products.²⁸ Third, firms located in SEZs or with foreign equity are allowed to manage their own imports of intermediate goods, usually up to individual quota limits approved by SEZ authorities or by MOFTEC in the foreign investment contract. Calls for tougher enforcement of contractual quotas for steel imports [Dickson, 1996: 12] suggests that foreign invested enterprises had been unconstrained in making imports. In sum, whilst ordinary trade remains restrictive, emergence of alternative customs regimes in the 1980s and 1990s has increased the number of domestically registered business concerns with official approval to undertake imports of steel.

Japanese reaction. The gradual decentralisation of China’s steel imports has provoked reassessment by the Japanese steel firms of their relationship with Minmetals. Especially during a period in which Minmetals resolutely opposed price increases, direct approaches by Chinese customers willing to pay prices demanded by the Japanese must have been hard to resist. For example, it was reported in August

1994 that Japanese steel traders were receiving orders totalling more than 50,000 tonnes per month from individual Chinese firms [NW, 5 Aug 1994].²⁹ The difficulty for Japanese majors is that whilst prices for such orders were higher than those being offered by Minmetals, quantities were smaller and subject to greater variation (as well as risk). Hence, for the time being, they were not prepared to entertain such deals.

However, in the 1994 environment of rising world steel prices, the Japanese were prepared to issue thinly-veiled threats. In mid-1994 negotiations between Minmetals and the Japanese side became deadlocked, delays in securing steel supplies for Chinese customers ensued. Critical shortages were compounded by “no progress in import plans” from other countries including Korea and Brazil [YCHJ, Aug 1994: 8]. In July 1994, in the midst of the stalemate, the Japanese exploited the situation by negotiating direct sales to a Shanghai manufacturer of shipping containers,³⁰ which urgently required hot rolled strip. Approximately 5000 tonnes was supplied at prices which were \$20 higher than those offered by Minmetals for the current round of negotiations [YCHJ, Aug 1994: 8]. Minmetals took no part in the deal, which was arranged through Japan’s Itochu trading company [MB, 25 July 1994]. This one-off transaction can be seen as a calculated warning to Minmetals, that it might be bypassed again in future, with “timing of the news of about the deal coinciding with the restart of Minmetals negotiations in Beijing” [MB, 25 Jul 1994]. However, the Japanese failed to anticipate the angry reaction of China’s government, which reiterated that Minmetals was the only trading concern authorised to initiate negotiations with Japanese suppliers. This response, together with new canalisation restrictions, suggest the Japanese prematurely judged the extent of ordinary trade decentralisation that would prevail over the medium term.

Hong Kong. Establishment of new business contacts in Hong Kong provide another indication that Japanese cartel members were re-evaluating relationships with Minmetals. Growing favour existed for the idea that Hong Kong could be used as an

²⁸ See, for example, [SJD, 14 Feb 1994; 25 Sep 1995].

²⁹ Many of these firms may have had the right to self-manage imports, for example, by virtue of joint venture status or location in special economic zones.

³⁰ Some reports say that two container manufacturers were involved.

alternative intermediary for shipments to China. More than two-thirds of Japan's steel exports to Hong Kong are said to end up in China. Prices on shipments to Hong Kong were also up to 20 percent higher than those established with Minmetals [NW, 15 Aug 1994]. Although new Chinese buyers with legal rights to self-manage imports now existed, tacit agreement to sell only to Minmetals may have precluded their supply. The only remaining viable option may have been trans-shipment through Hong Kong buyers. Even if the Japanese are now prepared to entertain Chinese customers besides Minmetals, Hong Kong retains attractiveness as an export channel.

Foreign investment. The Japanese steel companies appear to be exploiting the legal capacity of foreign invested ventures to self-manage imports. Japanese investment in China's steel industry to date has been *skin-deep*, focusing on development of tinning lines or service centres (which perform simple operations such as splitting coil into sheets). Deeper involvement in China's steel industry has been discounted.³¹ A large proportion of these operations have in turn been established to supply downstream Japanese-partnered joint ventures. The following quote encapsulates the import facilitation aspect of FDI in China by the Japanese steel majors:

“...in the flat products sector the emphasis appears to be on coating sheet which in many cases is sourced offshore...several foreign partnered joint ventures have or are being established, the attraction to the investors being the entry or increased slice it gives them of the Chinese market” [Millbank, Jan 1996: 11].

CONCLUSION.

After balancing costs and benefits, the Japanese steel-makers concluded that they were better-off with a less-coordinated approach to negotiations with Minmetals. On 3 November 1994, the President of Nippon Steel, Takashi Imai, proposed to the Chinese that the long-standing negotiations framework be ended. This shocked Minmetals. The Chinese government opposed the idea, asserting that continuance of the arrangements was to the best interests of both Japan and China [GJSB, 29 Nov 1994; 30 Dec 1994]. Contention over the proposal delayed, yet again, export negotiations

for the new year. Under all circumstances, no matter what institutional framework ultimately be deployed, for the time being China still needed Japanese imports, and delays in contract settlement had potential to cause domestic steel shortages. Eventually, the parties agreed to hold combined negotiations “one last time”, for February 1995 to July 1995 shipments. For later periods, Minmetals would be required to negotiate separately with each of the 6 Japanese companies.

How did events subsequently unfold? In May 1995, Japanese steel firms trooped off to Beijing, one by one, to enter into individual negotiations with Minmetals. The farcical nature of this procession, the belief that each Japanese firm achieved similar if not equal prices, coupled with “breathtaking speed at which traders have accumulated supposedly confidential shipment details” [MB, 13 July 1995], all served to provoke suspicions amongst industry observers that a high degree of negotiations collusion and coordination still exists. A widely-held view was that the steel-makers would follow the lead set by Nippon Steel in individual negotiations [NKS, 16 Jun 1995], just as Nippon Steel had been the “champion negotiator” during the earlier period. In any event, the Japanese were successful in obtaining sought-after price rises for the first set of post-July 1995 negotiations (as narrowing differentials in FIGURE 1 demonstrate).

In the most recent set of price negotiations, however, the Japanese producers have actually agreed to 4-5 percent price *cuts* in negotiations with Minmetals [NKS, 28 Jun 1996; 26 Jun 1996]. Decreases occurred against the back-drop of weakening world demand. The Chinese appear to have discovered that they can source cheaper imports elsewhere. Whilst the threat to abandon the Sino-Japan negotiations arrangements in an environment of rising world steel demand aided Japanese bargaining power, the corollary, after-all, may be that Japanese interests are better served in sticking to the arrangements in situations of weak world demand. Is it therefore possible that the Japanese steel producers miscalculated? Perhaps they were too impressed by the opportunity to undercut the Minmetals monopsony presented by rising world demand

³¹ See, for example, reported comments of Nippon Steel president Takashi Imai [MB, 13 Oct 1994].

in 1994 and 1995, and did not sufficiently consider dynamics if and when third country export demand began to decline.

In fact, there are still reasons for believing that the cancellation of the long standing steel arrangements by the Japanese was based on rational, long-term considerations. One way of interpreting the combined evidence present in the above sections is as follows. Firstly, the Japanese steel makers never made the mistake hinted at above. They always recognised the benefits of the China negotiations system during periods of weak demand in world markets. However, “the writing was on the wall”. The Japanese producers knew that internal and external (read American) pressures to end collusive business practices would eventually become hard to resist. This may form the *prima-facie* reason for terminating the arrangements.

Secondly, however, whilst the “writing was on the wall”, there was no reason to believe that pressure would mount soon. The Japanese appear to have been motivated to end the negotiations arrangements sooner rather than later because they believed that in the meantime, the arrangements actually impeded price rises. The negotiations framework enhanced Minmetals monopsony power in an environment in which individual Chinese customers and buyers from third markets were prepared to pay considerably more than Minmetals in order to secure Japanese steel.

Third, collusive arrangements could be ended now under terms which suited the Japanese producers, rather than later under sustained pressure from the Japan Fair Trade Commission or the US Trade Representative. Indeed, the evidence is that the cartel members are still “having their cake and eating it too”. Even if representatives of Japanese steel firms are not physically present at the same set of negotiations, there is nothing to stop behind the scenes cooperation, as indeed industry analysts suspect. Termination of the negotiating arrangements may be something of an experiment. Ending the arrangements lent credibility to any future strategic threats launched at Minmetals, because the Japanese would be able to point to an instance where they had actually carried-out the foreshadowed action. All the more so given that this action (ie. ending the joint negotiations) appeared to contradict basic Japanese interests when world markets were on the downside. Thus, it would appear that the Japanese had the

credibility to carry out threats even when it hurt themselves. And yet, in reality, the Japanese were not taking any irretrievable steps, since it would be very easy to re-establish links behind the scenes if need be. (Of course, Minmetals may well by now have seen through the ruse!)

A less conjectural summary would be that, due to the commercial-in-confidence nature of contract *minutiae*, it is impossible to ascribe motives with 100% certainty. The full range of costs and benefits considered by the Japanese cannot be known by anyone but themselves. The only sure thing is that the Japanese firms applied calculus of cost and benefit and on balance concluded that arrangements ought to be changed.

Finally, a note about the nature of the Japanese cartel. Bargaining between the cartel and Minmetals centred on the distribution of cost savings. These savings resulted in equal measure (a) from the size of orders that Minmetals brought to the negotiating table, and (b) the ability of Japanese cartel members to assign production amongst their combined factory facilities. Thus, the Japanese cartel was more than just a strategic response to Minmetals' monopsony buying power. When firms engage in collusive behaviour, it is often on the basis of strategic pricing cooperation which occurs beyond the factory gate and which takes each factory's manufacturing process as a given. In the Japanese case, however, cooperation was much less superficial, because the manufacturing process was very much part and parcel of the cartel arrangements. The Japanese firms combined to exploit technological and production opportunities. Correctly considered, the Japanese cartel extended beyond ex-works pricing behaviour to encompass a whole new mode of production.

TABLE 1. Minmetals orders for ordinary steel under Sino-Japan framework (tonnes).

Period & order no.	Order date ^a	Delivery date	Total	Wire rods	Plates	Cold rolled sheets	Hot rolled sheets	Galvan-ised sheet	Silicon sheet & other
Feb-93 to Jul-93			3,930,000	395,000	430,000	1,141,000	1,678,000	100,000	186,000
3	24-Feb-93	Apr-93	827,000	45,000		232,000	506,000	12,000	
Aug-93 to Jan-94			1,090,000						
5	2-Nov-93	Dec-93	79,000	15,000	19,000	22,000	16,000		
6	6-Dec-93	Jan-94	81,000			25,000		13,000	
Feb-94 to Jul-94			≅1,835,000						
1		Feb-94	150,000						
2		Mar-94	305,000						
3	3-Mar-94	Apr-94	306,000	39,000		109,000	62,000	53,000	18,000
4	31-Mar-94	May-94	454,000	63,000	37,000	185,000	68,000	75,000	18,000
5	25-Apr-94	Jun-94	316,000	43,000		129,000	53,000	31,000	33,000
6	1-Jun-94	Jul-94	309,000	38,000		108,000	74,000	35,000	
Sep-94 to Jan-95 ^b			≅1,200,000						
1	29-Jul-94	Sep-94	230,000	10,000	20,000	80,000	60,000		
2	1-Sep-94	Oct-94	230,000	30,000	20,000	80,000	60,000	25,000	
3	29-Sep-94	Nov-94	250,000	7,600	20,000	75,000	85,000	25,000	
4		Dec-94	≅240,000				85,000		
5	5-Dec-94	Jan-94	250,000	30,000	20,000	80,000	60,000	25,000	

Notes: ^a Delivery dates based on (1) date Minmetals handed order-list to Nippon Steel, (2) date of Nippon Steel press release, or else (3) date of accompanying press announcement.

^b No contract deliveries in August due to breakdown in negotiations. Sources: compiled from Metal Bulletin, Japanese media reports and Yejin Chanpin Hangqing yu Jiage.

TABLE 2. Period deliveries to Minmetals under Sino-Japan framework (unit: tonnes).

Period	Tonnes
May 1988 to Nov 1988	2,140,000
Dec 1988 to May 1989	1,890,000
Jul 1989 to Dec 1989	1,210,000
Apr 1990 to Aug 1990	500,000
Sep 1990 to Feb 1991	530,000
Mar 1991 to Jul 1991	470,000
Aug 1991 to Jan 1992	560,000
Feb 1992 to Jul 1992	590,000
Aug 1992 to Jan 1993	940,000
Feb 1993 to July 1993	3,930,000
Aug 1993 to Jan 1994	1,090,000
Feb 1994 to Jul 1994	1,835,000
Sep 1994 to Jan 1995	1,200,000
Feb 1995 to Jul 1995	1,200,000

Sources: compiled from Metal Bulletin and Yejin Chanpin Hangqing yu Jiage.

TABLE 3. *Steel sheeting prices (Sino-Japanese contract compared with Japanese exports to third countries). (US dollars per tonne).*

	Cold rolled coil			Galvanised sheet			Hot rolled coil		
	(a) Sino Japan contract	(b) Other Japan export	(a) / (b) percent	(a) Sino Japan contract	(b) Other Japan export	(a) / (b) percent	(A) Sino Japan contract	(B) Other Japan export	(a) / (b) percent
	Apr-94	365	500	73	440	550	80	282	395
May-94	365	500	73	440	550	80	282	395	71
Jun-94	365	500	73	440	550	80	282	395	71
Jul-94	365	510	72	440	570	77	282	400	71
Aug-94	365	520	70	440	580	76	282	410	69
Sep-94	380	520	73	462	580	80	295	410	72
Oct-94	380	520	73	462	580	80	295	420	70
Nov-94	380	520	73	462	590	78	295	410	72
Dec-94	380	520	73	462	590	78	295	410	72
Jan-95	380	520	73	462	590	78	295	410	72
Feb-95	420	520	81	510	600	85	335	420	80
Mar-95	420	540	78	510	640	80	335	420	80
Apr-95	420	550	76	510	640	80	335	440	76
May-95	420	560	75	510	660	77	335	450	74
Jun-95	420	570	74	510	670	76	335	470	71
Jul-95	420	580	72	510	730	70	335	480	70
Aug-95	490	580	84	620	720	86	400	470	85
Sep-95	490	580	84	620	750	83	400	440	91
Oct-95	490	560	88	620	740	84	400	440	91
Nov-95	490	550	89	620	700	89	400	430	93
Dec-95	490	550	89	620	700	89	400	410	98
Jan-96	490	540	91	620	650	95	400	400	100
Feb-96	455	520	88	560	640	88	350	390	90
Mar-96	455	510	89	560	620	90	350	380	92
Apr-96	455	500	91	560	600	93	350	370	95
May-96	455	500	91	560	600	93	350	370	95
Jun-96	455	500	91	560	600	93	350	380	92
Jul-96	455	500	91	560	600	93	350	380	92

Source: Metal Bulletin and author's calculations.

TABLE 4. *Unconsolidated gross profits of Japanese steel companies.*

Year to:	31 March 1995			31 March 1996			31 March 1997			31 March 1998		
	(a) Gross profit	(b) Total sales	(a) / (b) percent	(a) Gross profit	(b) Total sales	(a) / (b) percent	(a) Gross profit	(b) Total sales	(a) / (b) percent	(a) Gross profit	(b) Total sales	(a) / (b) percent
Nippon Steel	342.9	2090.6	16.4	369.2	2099.8	17.6	385.0	2130.0	18.1	380.0	2090.0	18.2
NKK	177.3	1171.9	15.1	213.7	1159.7	18.4	213.0	1150.0	18.5	216.0	1140.0	18.9
Kobe Steel	158.5	1065.6	14.9	195.6	1146.4	17.1	188.0	1160.0	16.2	188.0	1160.0	16.2
Sumitomo Metal	168.1	1011.5	16.6	201.8	1057.0	19.1	216.0	1050.0	20.6	218.0	1070.0	20.4
Kawasaki Steel	115.5	946.7	12.2	138.3	928.4	14.9	141.0	930.0	15.2	156.0	920.0	17.0
Nisshin Steel	61.8	370.6	16.7	69.0	383.6	18.0	63.0	365.0	17.3	65.0	362.0	18.0

Source: SBC Warburg, June 1996. Note: 1995-96 actual results, 1997-98 estimates.

REFERENCES.

Newspaper or newsweekly sources (dates cited in text):

DY. The Daily Yomiuri.
GJSB. *Guoji Shangbao* [International Business].
MB. Metal Bulletin.
NKS. Nihon Keizai Shimbun.
NW. The Nikkei Weekly.
SJD. *Shijie Jinshu Daobao* [World Metals].

Journal and other sources:

- China's Customs Statistics*, January 1993 to June 1996, serial nos.41-82, Economic Information & Agency (for General Administration of Customs), Hong Kong.
- Dickson I., July 1996, *China's steel imports: an outline of recent trade barriers*, Chinese Economy Research Unit Working Paper, University of Adelaide.
- Findlay C., Feng L., Richardson H. & Wu Y., *'The outlier': Chinese steel industry development and prospects for trade*, Pacific Economic Papers, Australian Japan Research Centre, Australian National University, Canberra.
- Imai K., 1980, "Iron and Steel" in Sato K. (ed), *Industry and Business in Japan*, Croom Helm, London.
- Lancaster C. & Richardson P., May 1995, *Fragmentation within the Japanese Steel Mills: beginning of the end for collective price negotiation?*, report published by Potter Warburg Securities, Sydney & Melbourne.
- Millbank P., January 1996, "Steel still shaped from the centre" in *Metal Bulletin Monthly*, pp.10-17.]
- Naughton B., July 1996, *China: from export promotion to an open economy?*, paper prepared for International Economics Association Round Table Conference on "International Trade Policy and the Pacific Rim", Sydney.
- SBC Warburg, June 1996, *Asian Steels Review*.
- Smith B., March 1977, "Bilateral Monopoly and Export Price Bargaining in the Resource Goods Trade" in *The Economic Record*, vol.53, no.141, pp.30-50.
- Smith B., 1978, "Long-Term Contracts for the Supply of Raw Materials" in Crawford J. and Okita S., *Raw Materials and Pacific Economic Integration*, Australian National University Press, Canberra.
- Sugimoto T., December 1993, "The Chinese Steel Industry", in *Resources Policy*, vol.42, no.7, pp.264-86.
- YCJH. *Yejin Chanpin Hangqing yu Jiage* [Metallurgical products market situation and prices], January 1993 to February 1995, serial nos.75-102, Ministry of Metallurgical Industry, Beijing. Internal periodical available to author.

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