

PROCEEDINGS OF THE WORKSHOP ON STEEL TRADE AND ADJUSTMENT ISSUES

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FOREWORD

On 29 and 30 October 1996, the OECD organised a *Workshop on Steel Trade and Adjustment Issues* with the Dynamic Non-Member Economies in South America and Asia. The Workshop brought together more than 130 government, industry and trade union specialists from 36 countries. The areas represented collectively accounted for close to 90 per cent of world steel production and 90 per cent of world steel exports. This document contains a synthesis report on the proceedings, as well as copies of all the submissions that were made by participants.

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SYNTHESIS REPORT ON STEEL TRADE AND ADJUSTMENT WORKSHOP

SUMMARY

The Workshop on Steel Trade and Adjustment Issues with the DNMEs, China and India brought together more than 130 government, industry and trade union specialists from 36 countries that collectively account for close to 90 per cent of world steel production and 90 per cent of world steel exports. The open and frank exchange of views and information revealed a wide range of perspectives on key industry issues.

Discussions were organised under three themes: (i) market and industry overview -- the current situation and the outlook; (ii) steel trade issues; and (iii) the situation in steel -- the role of government in selected areas. Conclusions and observations follow.

Market and industry overview -- The current situation and the short term outlook

Market and industry situation

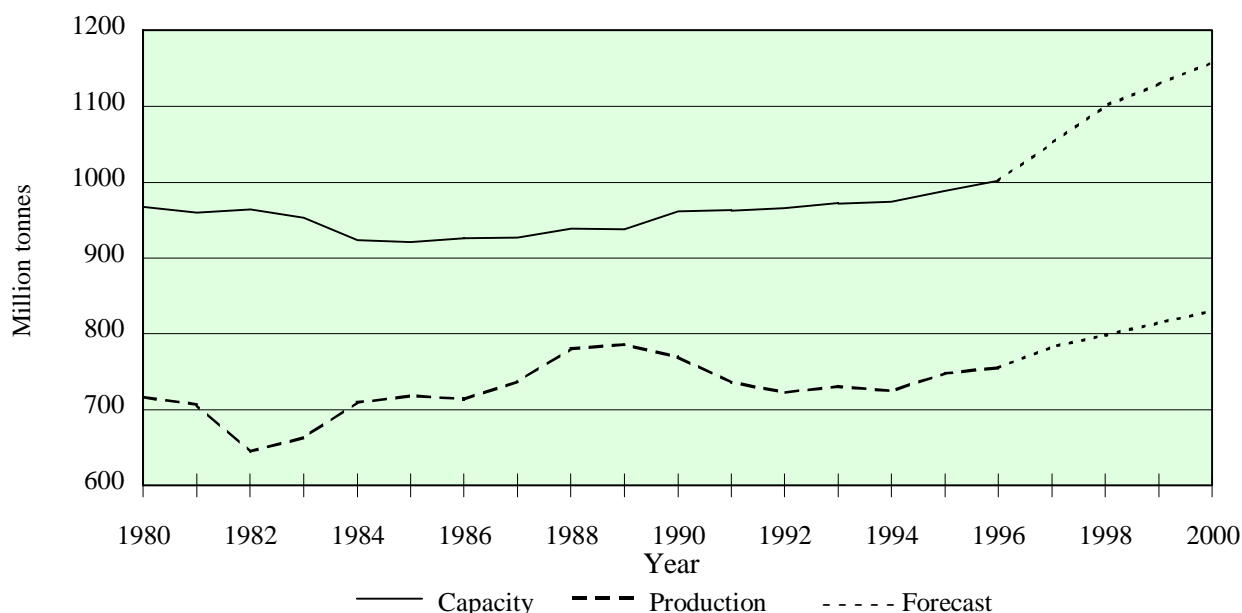
During the first half of the 1990s, the steel industry benefited from strong growth in steel demand from countries in the Asia-Pacific area. The area provided a major market for eastern European (including the former USSR) and OECD exports during market downturns or, in the case of eastern Europe, a collapse in domestic markets. While demand in the Asia-Pacific region is expected to continue to be strong during the next several years, ambitious plans to expand capacity in the area will diminish net imports. With trade opportunities narrowing, there will be further pressures for the industries in the OECD and eastern European areas to adjust. The pressures will be heightened by ongoing challenges from competing materials and by structural changes within the industry itself. The structural changes will challenge the role of traditional integrated steel producers, which, in the case of North America in particular, will compete increasingly with highly competitive steel minimills over an ever-widening range of steel products.

Supply and demand relationships

The long-standing imbalance in steel supply and demand is likely to increase over the next several years, as capacity expansion will be almost double the expected growth in steel consumption (see figure). There is considerable debate, however, on the magnitude of the supply/demand imbalance and how it should be measured. Asian-Pacific and South American countries are building capacity based on their growing markets, while representatives from North American and European economies find no overcapacity in their respective areas. While some conclude there is substantial overcapacity in the area comprising the former Soviet Union, others argue that low production costs have conferred at least a temporary comparative advantage to producers. The failure of firms and countries to recognise the existence of non-competitive facilities, and the need to close them, will have a depressing effect on steel

prices and result in heightened trade tensions, particularly during downturns, at which time allegations of dumping are likely to become more widespread.

World steelmaking capacity and production



The exchange of views at the Workshop on the current situation and the outlook indicated that many countries continue to view their situations in a decidedly national context, despite the increasingly global nature of the steel business. In the Asia-Pacific area, for example, a number of countries have adopted policies to support increased self-sufficiency in steel -- which in many cases is relatively low -- with a view towards enhancing the overall competitiveness of their manufacturing sectors. Some of these countries expect that their growing competitiveness will also result in a substantial increase in exports to the expanding Asian-Pacific market. With a number of countries in the region pursuing similar strategies, competition for the potentially stagnant, or even shrinking, market for exports would intensify.

Another theme that was addressed at the Workshop concerned the plans being pursued by steelmakers to enhance or maintain their competitiveness. The discussion indicated a common strategy among many of the world's steelmakers to increase their production of higher value-added steel, such as cold-rolled and coated steel sheets. This was mentioned by representatives from western Europe, North America and Japan, where integrated producers are being increasingly selective in the products and markets in which they compete. It was also mentioned by the representative from Russia, where efforts are being made to increase exports of higher value products, and representatives from South America and the Asia-Pacific area, where efforts are being made to provide higher quality materials to major steel-consuming industries. The common strategy represents an effort to reduce dependence on price-sensitive, often marginally profitable, commodity-grade steel, much of which is used in construction. With such

steel accounting for two-thirds, or more, of the market, there is question, however, whether the intensification of competition in higher value-added steel products can succeed. The end-result might simply be to intensify competition in higher value products, with predictable consequences on prices, profitability and trade.

Steel trade issues

The notable expansion in steel consumption in the Asia-Pacific area, and the emergence of eastern European countries (including the economies comprising the former Soviet Union) as major steel exporters resulted in a sharp expansion in steel trade during the 1990s, with the share of steel exports (including intra-EU trade) to total production increasing from 25 per cent in 1990, to 35 per cent in 1995. The increase in trade was accompanied by a considerable increase in the volatility of trade flows, with both China and the United States experiencing swings from record imports to record exports within one or two year time-frames. Conditions for a further expansion in trade have been established through the reduction of government involvement in the industry (via privatisation and reduced state supports), and the liberalisation of steel markets (via the reduction or elimination of tariffs and non-tariff barriers to trade).

It is, however, questionable whether the gains made in trade can be sustained. As indicated previously, much of the expansion in trade has been based on the rapidly growing import needs of the Asia-Pacific area. As these countries develop their steel industries, there is concern that excess capacity will become apparent, and that these countries will then take measures to protect their industries. Evidence of growing import-sensitivity is already apparent, as virtually all of the developing economies in the region have recently adopted trade measures, or have been asked by their industries to take trade-related actions.

The evolving situation has underscored the need for more transparency and discussion of emerging issues, and has reinforced the need for multilateral guidelines that go beyond current WTO rules in disciplining state aids and supporting open markets in steel. While progress on this front was made during negotiations on a multilateral steel agreement (MSA), the lack of consensus among OECD countries on a number of key points brought the negotiations to a standstill several years ago. Even if the differences among the OECD countries could be overcome, a formidable challenge to gain the support of other key players would remain. In the absence an MSA, there is consensus on the need for all the major players in steel to work more effectively together towards a convergence of views on emerging issues, with a view towards influencing government and industry decisions and policies in constructive ways.

The situation in steel -- the role of government in selected areas

The Workshop touched briefly on a number of other issues of importance to the industry, including the role of governments in setting industry objectives, state ownership and privatisation, competition policies, the finance and investment of projects, energy and the environment, and globalisation.

The discussion indicated that the role of governments in the steel industry had diminished significantly during the past decade. The completion of government-backed restructuring programmes and privatisation in many counties, for example, have returned decision-making to the private sector, where managers are taking a much more global view of the industry. With cross-border investment increasing, some are concerned, however, that efforts to minimise costs could lead to a shift in

steelmaking activities to low-wage countries where environmental regulations are lax. The concern might however, be overstated. It was pointed out that technological advances have increased efficiency to the point where labour costs are no longer as determinant a factor of competitiveness in steel as in the past. Moreover, the introduction of more knowledge-intensive technologies in steel has placed higher priority on the education and technical skills of the work force -- an area in which traditional steelmaking countries retain an important advantage.

While governments have reduced their role in the industry, Workshop participants agreed on its importance in assuring fair trade, creating an overall economic climate conducive to investment, and in enforcing competition policies. In the field of competition policy, there is concern that companies could undermine the progress that has been made in liberalising trade by adopting their own anti-competitive practices to, in effect, protect their markets. In the absence of an international framework for competition rules, it was suggested that competition issues could be dealt with on a sectoral basis, as has already been done in a number of instances.

Conclusions

The Workshop succeeded in initiating an informative dialogue with the non-Member economies that are becoming increasingly important players in the field of steel. It was apparent that further contact, on a more regular basis, would be mutually beneficial, both for increasing transparency and for addressing current and emerging issues -- most of which have an important multilateral dimension. In structuring future activities, there was consensus that meetings should focus more intensively on specific topics, and, to the extent possible, include all major players.

SYNTHESIS REPORT ON THE STEEL TRADE AND ADJUSTMENT WORKSHOP

Introduction

The OECD Workshop on Steel Trade and Adjustment Issues brought together government, industry and trade union representatives from countries accounting for close to 90 per cent of world crude steel production and close to 90 per cent of world steel exports. The purpose of the Workshop was to initiate an exchange of information and views on the key issues facing the steel industry during the next several years. As Mr. Taniguchi, the Deputy Secretary General, pointed out in his opening remarks, the timing for the meeting could not have been better. Tremendous changes were occurring in the steel industry world-wide, with implications for every country and steelmaker participating in the Workshop.

In the area of government involvement, for example, many governments had been reducing involvement in their steel industries, through privatisation and through reductions in state supports. At the same time, trade was being liberalised through the reduction of tariff and non-tariff barriers, thereby opening up markets to increased international competition. Moreover, government deregulation was gaining widespread support, a development which again was opening up markets to more competition. This opening of markets was seen as providing new trade and investment opportunities for the world's steelmakers. One of the goals of the Workshop would be to exchange views on how industries in different parts of the world were responding to these changes, and to discuss how countries could work more effectively together to support further liberalisation in the sector.

Significant changes were also occurring in world steel supply and demand patterns. On the demand side, steel consumption was likely to reach a record level in 1997, and continue to grow through the year 2000, on a global basis. On the supply side, steelmaking capacity would also continue to grow through the year 2000, particularly in the Asia-Pacific area, as well as in North and South America and the Middle East. The Workshop would provide an opportunity to exchange further information on the nature and extent of shifts in supply and demand patterns, and to discuss the longer term implications for steel trade in various areas of the world.

Finally, it was clear that environmental issues were receiving increased international attention, particularly in the area of climate change. With pressures mounting for countries to stabilise and reduce greenhouse emissions, it seemed that industries such as steel would be asked to find ways to reduce their emissions even more.

Market and industry overview -- The current situation and the short term outlook

Overview

In its overview statement on the situation in steel globally, the OECD Secretariat predicted that stronger markets would help lift world crude steel production from slightly over 750 million tonnes in

1996, to over 780 million tonnes in 1997, and then to about 830 million tonnes by the year 2000. The 80 million tonne growth in steel production would, however, be surpassed by 156 million tonnes of additional steelmaking capacity to be brought on-line through the year 2000. Capacity utilisation would therefore fall from 76 per cent (in 1996), to 71.5 per cent (in 2000). The decline in operating rates would have a significant effect on prices and trade.

The Secretariat's presentation stimulated considerable discussion on the manner in which capacity could be defined, and overcapacity could be measured.

Definition of effective and nominal capacity

Capacity, it was pointed out, could be defined on an *effective* basis, or on a *nominal* basis. *Effective capacity* was the maximum annual production possible under normal working conditions, after allowing for normal repairs, maintenance and holidays. In other words, effective capacity was a prediction as to what could be produced, given normal operating conditions -- taking into account all planned increases or decreases in capacity that were expected to take place during a year.

Nominal capacity, on the other hand, was the technical, rated capacity of a plant. Since it did not take specific operating conditions into account, it was higher than effective capacity. In the case of developing countries, the difference between nominal and effective capacity was often sizeable, since those countries generally had to develop both a good deal of managerial and technical expertise -- as well as supporting infrastructure -- in order to optimise operations.

In the analysis prepared by the Secretariat, countries participating in the Steel Committee had provided estimates of their effective capacity to the Secretariat. Capacity for other countries, however, reflected estimates of nominal capacity. Whichever approach was used, there was agreement that it was generally difficult to compare data among companies and countries as methodologies for making estimates within specified guidelines still differed significantly.

Defining and measuring overcapacity

The definition and measurement of *overcapacity* also received considerable discussion at the Workshop. Factors such as short-term variations in the market (during a given year) had to be taken into account, as did cyclical changes in the market and the situation of idled capacity.

The *short-term* variations that occurred in the market, for example, made it difficult to evaluate overcapacity by simply comparing annual production data to annual capacity data. Doing so would lead to an overstatement of the "gap" between production and capacity since it would not take seasonal or other short-term fluctuations during a year into account. During a year, for example, there were likely to be periods when steel mills were required to increase production in order to meet demand. It would make more sense to compare production during these peak periods to capacity since steelmakers needed to have capacity available to meet these peak demands. The fact that facilities were used at a lower rate during other parts of a year did not mean that excess capacity existed.

In addition to short term factors, an appropriate methodology would also have to take *cyclical* changes in market conditions into account. An assessment of overcapacity made during market downturns, for example, would be quite different from assessments made during strong markets. Interestingly, it was pointed out, much had been written about overcapacity in various parts of the world

during the past several decades. Little, however, was said about it in 1979 and 1989, when steel markets were generally strong and most mills were believed to have been operating at close to their maximum level. The implication was that the overcapacity had disappeared, or perhaps had never existed.

In the current situation, there was also the challenge of refining data to take *idled capacity* into account, particularly when it was not clear when, or whether, this capacity would be restarted. In the case of Ukraine, for example, it was questionable whether many idled facilities would ever be restarted. As these operations employed many persons and were important potential sources for foreign exchange, there was, however, interest within the country to continue to support the mills, even if operations were restricted principally to maintenance.

Finally, during the discussion it was pointed out that overcapacity could be examined on a completely different basis -- namely by establishing a firm's *break-even point*, and then comparing its actual operating rate to it. The results one obtained using this approach, it was pointed out, could differ markedly from other approaches. One company, for example, could be profitable at 70 per cent capacity utilisation, while another might be unprofitable at 85 per cent; in this instance, the latter company would be the one with excess capacity.. Another issue to be dealt with concerned the production units to be analysed when measuring overcapacity. Attention typically had focused on *crude steelmaking* operations. It was pointed out that it would be more appropriate to examine the situation in specific product lines, which was where the real imbalances actually tended to occur.

Conclusion

The discussion indicated that the prospects for the industry through the year 2000 were mixed. While steel demand would continue to grow, capacity would increase at an even greater rate. This had implications for both steel prices and trade. A number of Workshop participants were concerned about the growing imbalance, suggesting that overcapacity could become more widespread. Technological advances in steelmaking that were facilitating the growth of relatively small production units at relatively low cost were seen as having further implications for the industry, particularly as these units expanded their product range to include flat-rolled steel products, the last domain dominated by traditional blast-furnace steelmakers.

With investment in the industry continuing at an impressive rate in certain areas, it was necessary for steel producers to become more aware of the situation outside their national markets, so that developments in neighbouring areas could be more effectively taken into account. Too often, it was pointed out, steelmakers did not pay sufficient attention to the investment plans being pursued in countries other than their own. With trade and investment becoming more globalised, the potential for duplicating investment was therefore growing. Increased international co-operation was therefore necessary to help establish more transparency and discussion on a broader basis. Many steelmakers in the Asia-Pacific area, for example, were basing some of their investment decisions on expected growth in the Chinese steel market, without sufficient knowledge of the changes that were occurring in that market, and without sufficient knowledge of potentially overlapping investment plans being pursued in other countries. To help assure that sound decisions were made, increased discussion involving all affected countries would be required.

The discussion on overcapacity underscored a range of issues that require further examination. First there was the matter of what to examine (crude steel or specific products) and the time period to be used (annual or shorter-term data). Then, a way to take cyclical and short-term variations in the market into account needed to be developed so that *reserve* capacity that was used during peak production

periods, was not confused with *excess* capacity that was rarely, or never, used. Finally, the notion that financial factors should be considered when examining overcapacity (via break-even points) seemed to deserve more attention.

North America

The presentation on the situation in steel in North America underscored the dynamic changes that were occurring in the area's steel industry, which was viewed as being at the epicentre of change. World class electric arc furnace operations with thin-slab casters were competing with integrated steel mills that employed advanced technologies and processes. Cutting edge research and development was being conducted alongside environmental engineering projects. The use of advanced process controls, computers and lasers in finishing mills was widespread and new galvanising lines were being built. Importantly, steel consuming industries were seen as having made significant progress in enhancing their international competitiveness, a development which would help secure a prosperous market in the years to come. While the North American Free Trade Agreement (NAFTA) had yet to make an impact, there was confidence that it would prove beneficial for the steel industries in the three countries (Canada, Mexico and the United States).

The short term outlook for the industry was good, with markets strengthening or, in the case of the United States, remaining strong, in 1997. Exports were seen as easing, while imports could rise.

Longer term, one key development to watch in North America was the expansion of "thin-slab" steelmaking facilities. In the United States, some 3-4 million metric tonnes of capacity was expected to be brought on-line in 1998 alone and an additional 12-13 million tonnes by the year 2000. The new production would affect exports (which would rise), imports (which would decline), and the sales from existing domestic suppliers (which would be shared with the new suppliers). Concerns about overcapacity were real, but, it was pointed out, North America was arguably the only major steel-producing region in the developed world where there was not currently overcapacity. On balance, the North American steel market in the year 2000 would be driven by low-cost, high quality, service-driven North American production; it would be vastly different and much more efficient than in 1990. As for the size of the market, the International Iron and Steel Institute had forecast that steel demand would remain at about 120 million metric tonnes per year in 2000.

Two other developments to watch were the upward structural shift in steel demand in North America and, as mentioned above, the positive effects of closer regional integration via NAFTA. The upward shift in demand, it was pointed out, reflected the development of new and existing markets for steel, and the improvement in North American manufacturing enterprises.

The North American producers were united in their concern about the substantial market distortions caused by private anticompetitive practices, closed markets, dumping and government subsidies affecting both steel and steel-containing products. To this end they had worked jointly to urge their respective governments to consider a co-ordinated approach to the problems associated with imports from the area comprising the former USSR. They were similarly united in their efforts to open-up steel-intensive markets in foreign countries, and to work together to promote greater use of steel.

South America

In South America, significant shifts had occurred in the economies in general and in the steel industry during the past several decades. In place of programmes promoting self-sufficiency, economies had been liberalised, and efforts had been undertaken to strengthen regional co-operation. This had resulted in upsurge in intra-regional trade, and increased foreign and domestic investment in steel and other areas. In the field of steel, privatisation had resulted in government holdings in the industry falling from 70 per cent in 1985 to below 8 per cent in 1995. With privatisation complete in Brazil, Argentina, Chile and Peru, only one major state-owned mill remained -- in Venezuela -- and it was due to be privatised in 1997. Major restructuring efforts had accompanied the privatisation: management and staffing changes had reduced costs and raised productivity; companies had invested in new, automated technology; and companies had closed obsolete plants while phasing out unprofitable products.

With the situation improving, and companies now profitable, access for steelmakers to foreign capital had increased. Steel companies in Brazil, for example, had been able to develop relatively ambitious investment plans totalling \$7.8 billion over the 1994-2000 period. Of this total, some 36 per cent of the investment was expected to be self-financed, with 34 per cent to come from local investors and 30 per cent from foreign sources.

In the field of trade, the region had shifted from a net-importing area in the 1970s, to a major net-exporting area during the 1980s as capacity increases had exceeded expected increases in regional steel consumption. Exports had increased with a view towards using capacity efficiently while earning needed foreign exchange. The situation had begun to shift in the late 1980s, however, as economic reforms were introduced. While 85 per cent of the area's steel exports were shipped to third countries in 1985, some 43 per cent currently remained within the region.

Longer term, the prospects for the region were good as steel consumption was expected by the IISI to grow by 4.5 per cent per year during the 1995-2000 period, to 28.0 million tonnes. As demand grew, less steel would be exported to third countries.

Europe

Western Europe

In Western Europe, the general economic situation had begun to weaken during the second half of 1995. The weakening was due to a number of factors, including inventory reductions, the lagged effect of higher long-term interest rates, major swings in exchange rates during the Spring of 1995 and the ensuing erosion of confidence throughout the European Union. In steel, prices had weakened; this, combined with a strengthening of the US dollar, had resulted in a decline in imports of certain products (such as semifinished steel) during the first half of 1996, as compared to the very high levels reached a year earlier. Imports of flat-rolled products, however, remained high. On the other hand, exports had increased in the first half of 1996; they were, however, expected to ease during the second half of the year.

The Commission was currently preparing a report on the competitive situation of the steel industry of the European Union in the coming decades. It would detail how the industry was modernising and reducing costs. Based on the analysis thus far prepared, the state of the industry was satisfactory, in the sense that companies had done much to reduce costs, which were nonetheless relatively high. The cost

situation was not specific to the steel industry, but one common to manufacturing in general in western Europe.

As regards the structure of the industry, thin slab minimills had not had the same impact in western Europe that was being felt elsewhere. This was due to the success that the western European integrated mills had had in concentrating on high-value coated and cold-rolled steel, which were products that could not be produced effectively by the minimills. As capacity was sufficient and these integrated mills were highly competitive, it was unlikely that new facilities would be built. The situation could, however, change as the minimill technology develops and the integrated mills examine re-investment possibilities.

On the matter of capacity, there was question as to whether and/or to what extent overcapacity existed in western Europe. One Workshop participant questioned a statement made by a leading industry executive in which overcapacity was alleged, a situation that seemed to be supported by a capacity utilisation rate of about 75 per cent. In response, it was pointed out that the situation was not so clear-cut. Problems in measuring capacity and establishing "norms" made it difficult to reach conclusions simply on the basis of capacity utilisation figures. Moreover, the statements made by individuals had to be placed in proper context; the complaint about overcapacity could well, for example, have been alluding to the need for certain segments of the industry to carry out further adjustment. With the restructuring that had been carried out, it appeared that there in fact was not much, if any, overcapacity. This was shown quite clearly in the case of flat products in late 1994 and early 1995. While the situation was not the same in long products, many facilities had been closed during the past several years, a development that had brought capacity and demand more in line.

On a more general note, two views were expressed on the outlook for the European Union -- an optimistic one that foresaw a resumption of growth once governments had addressed their fiscal challenges and European integration had advanced, and a pessimistic one that viewed unemployment, restrictive policies and high real interest rates as impediments to resumed growth.

Eastern Europe and the new independent states of the former Soviet Union (NIS)

A number of comments were made on the situation in eastern Europe, with particular attention to Ukraine. An expert team from the Japan Iron and Steel Federation had gone to that country in March and October to provide advice on restructuring. One of the biggest problems confronting the industry was in the field of energy, where shortages of electricity and natural gas were affecting operations. Some of these problems would diminish as the country proceeded with coal gasification projects. Efforts to improve domestic demand were going to have to be intensified as reliance on exports (which accounted for 60 per cent of shipments) was excessive. The situation in the former Soviet Union was not, one participant pointed out, the same as the situation one found in central and eastern Europe. In central and eastern Europe, future economic growth would be led by growth in services and light industry. The general economic situation was characterised as improving, and was probably better than official statistics indicated due to robust growth in unreported entrepreneurial activity. In the case of the area comprising the former USSR, restructuring in steel was seen as more difficult and time-consuming due to the large size of the steelmaking combinats, and their geographic concentration.

The situation in Russia, it was further noted, had recently been the subject of a study supported by the European Union's TACIS programme. The study presented two scenarios -- a "realistic" scenario that forecast domestic steel consumption and exports at 24 and 8 million tonnes, respectively, for the year 2005, and an "optimistic" scenario that foresaw consumption of 38 million tonnes and exports of 13 to

15 million tonnes for 2005. This compared to current crude steelmaking capacity of 85 to 90 million tonnes. In conducting the study, certain differences in accounting techniques and cost-benefit analysis had been revealed. Russian firms, for example, did not customarily include financial costs in their cost estimates, and they did not take the unrealistically low transport and energy costs into account in their analyses. The implications were particularly important in the case of the facilities located in the Ural mountains, where substantial distances to end markets and poor rail and road conditions threatened to marginalise the firms.

The current situation in Russia was one in which the steel industry found itself highly reliant on exports, which were an important source of revenue for the industry. Some sixty per cent of production was being shipped to foreign markets (including the NIS area). This situation, which involved some 24 million tonnes of exports, would probably continue since the short-term prospects for growth in the domestic market were not good. As for the structure of trade, some 40 to 45 per cent of the exports were semifinished steel products. Producers were making efforts to upgrade the mix to include more value-added, coated products, with a view towards reducing the losses being incurred on the semifinished steel sales.

Asia-Pacific area

In the ASEAN area, which includes Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam, economic growth had exceeded 10 per cent per annum thus far during the 1990s, a development which supported strong growth in steel consumption. With self-sufficiency in steel relatively low (44.2 per cent), countries were increasing their steel capacity and production, while diversifying their production to include a higher per centage of flat-rolled products. A compilation of capacity expansion plans for the ASEAN countries, plus the Republic and Korea and Chinese Taipei, indicated that steelmaking capacity would increase by close to 60 per cent between 1994 and 2000, to 95 million tonnes. Most of the increase would occur in four countries: Korea (up by 16.6 million tonnes), Chinese Taipei (up by 6 million tonnes), Thailand (up by 6.3 million tonnes) and Malaysia (up by 4.2 million tonnes).

Some 75 per cent of the increase in capacity in the ASEAN region plus Chinese Taipei would be in the form of electric furnace facilities, which would account for some 32.8 million tonnes of the area's total steelmaking capacity of 43 million tonnes (or 76 per cent). With the availability of quality scrap declining (reflecting higher production of coated or surface-treated sheet and laminated sheets), there was interest in exploring alternative sources for iron inputs. The situation was one that required ongoing attention as the region could find itself short of iron units for steelmaking.

In the field of environment, ASEAN countries were conscious of environmental issues as they related to steelmaking and were constructing facilities to address environmental concerns. The Japanese Government was providing assistance in this area through a Green Aid Plan that focused on Asian countries.

Japan

In Japan, the longer-term appreciation of the yen and the opening of the Japanese economy had increased competitive pressures on the Japanese steel industry both in domestic and foreign markets. As a result, domestic steel producers had to some extent shifted their production of downstream products such as cold-rolled and galvanised sheet and tinplate to facilities in the ASEAN region. Markets were shifting

as well, as steel-consuming industries shifted their production off-shore. With the Japanese population expected to begin to contract as from about 2010, there were other longer term concerns about future demand for steel within the country. Reflecting the changing competitive environment, capital investment in the industry had fallen to \$5 billion in fiscal year 1996; most of the investment focused on projects to improve energy efficiency, upgrade existing technology improve environmental performance.

India

The situation in the Indian steel industry has been subject to considerable change during the 1990s. Up to the 1990s, the industry grew in a highly protected and controlled environment, with a view towards promoting import-substitution. Import tariffs were high, and administrative controls existed over prices and distribution, while import resources were allocated by the state. The industry had prospered in this environment, with production rising from 1.5 million tonnes in 1950 to 15.1 million tonnes in 1990/91. Through 1967/68, most of the growth in the industry occurred in integrated steelmaking, where capacity had risen from 1.5 to 8.9 million tonnes. During the 1970s and 1980s, abundant scrap supplies had facilitated the growth in electric furnace steelmaking, which currently accounted for 35 per cent of the country's crude steelmaking capacity (and about 50 per cent of crude steel production).

Economic reforms initiated by the Government since 1991 had added new dimensions to industrial growth in general and the steel industry in particular. Under the reforms:

- licensing requirements for steel capacity creation had been abolished, except for certain locational restrictions;
- the steel industry had been removed from the list of industries reserved for the state sector;
- automatic approval had been granted for foreign equity investment in steel for up to 51 per cent of a project;
- price and distribution controls on steel had been removed (as from January 1992);
- restrictions on external steel trade had been removed (both on imports and exports); and
- steel import duties had been reduced from a peak of 105 per cent in 1992/93 to 30 per cent during current fiscal year.

Other reforms that had benefited the industry had included a reduction in import duties on capital goods, convertibility of the Rupee on the trade account, permission for companies to raise resources from overseas capital markets, and rationalisation of the tax structure. With the reforms, the situation in the industry had changed markedly; during 1991/92 to 1995/96:

- annual crude steel capacity had risen (notably in the nonintegrated sector) by 23.6 per cent, to 27.38 million tonnes;
- crude steel production had risen by 31.6 per cent, to 22.56 million tonnes;
- apparent steel consumption had risen by 42.5 per cent, to 21.15 million tonnes;

The specialty steel industry had also benefited from the economic reforms, as production of stainless and other special steels had increased at annual compound rates of 18 per cent (to 440,000 tonnes) and 13 per cent (to 1.6 million tonnes), respectively, during the period.

In the field of trade, imports of carbon steel had risen from 997,000 tonnes in 1991/92 to 1.9 million tonnes in 1995/96, while steel exports had risen from 373,000 tonnes to 1.32 million tonnes. Imports had traditionally been dominated by flat-rolled products, but this might be changing with the commissioning of new rolling mills in the country. Some 85 per cent of exports, on the other hand, had been dominated by semifinished steel, bars and rods and plates. The structure had, however, changed recently to include higher value sheets (hot-rolled, cold-rolled and coated).

The outlook for the industry suggested that finished steel consumption would increase to 32.69 million tonnes by 2001/02 and 48.8 million tonnes by 2006/07, with the ratio of flat products consumed rising from 46 to 50 per cent. Production would rise as well, but not as rapidly as consumption. The difference between the two would therefore increase -- from 680,000 tonnes in 2001/02, to 4.79 million tonnes in 2006/07. Additional production would be achieved by enhancing the capacity of existing plants through modernisation and expansion, and through the encouragement of greenfield projects. While imports would be inevitable, efforts would be made to accelerate import substitution through increased domestic production. Since 1991, the private sector had invested some \$1.733 billion in the industry, increasing the capacity to produce products by 3.9 million tonnes. Another 13 projects totalling \$3.85 billion (involving capacity of 7.35 million tonnes) had been approved by financial institutions and were in various stages of implementation; state-owned steelworks were to invest an additional \$4.58 billion, principally for upgrading existing facilities. Most of the expansion in capacity would involve the construction of blast-furnace facilities. With the cost of energy high, the outlook for smaller-scale electric furnace facilities was not encouraging; larger scale facilities, however, were seen as having promising futures.

The industry was viewed as having inherent competitive advantages due in part to abundant local supplies of iron ore and coal. It (the industry) has played an important part in India's development from the 1950s onward, serving to create employment, earn foreign exchange and stimulate the growth of other industries. The Government had played an instrumental role in developing integrated steelmaking facilities in the country, but the role had diminished over time. Supports for the state's six integrated plants had diminished, and efforts for the plants to raise funds had relied increasingly on retained earnings and commercial sources. Some divestiture in these plants had already occurred. In concert with development, steelmakers had drawn up long and short term plans to address environmental issues. Integrated steelmakers had reduced emissions, and continued to take actions to lower these emissions yet further, while many of the countries electric furnace steelmakers were by and large in compliance with environmental regulations. After five years, the global market was seen as favouring those steel industries in developing countries that had already made substantial progress in setting up facilities. India was believed to be well placed in this regard; with capacity growing, exports could reach 6 million tonnes by 2001/02.

People's Republic of China

The Chinese steel industry had developed in three phases, characterised by smooth and steady development (1952-57), cautious and fluctuating growth (1958-78) and, with liberalisation of the economy, rapid growth (since 1978). Crude steel production would soon top 100 million tonnes, and continue to grow, to 110 to 120 million tonnes by the year 2000. Thereafter, relatively rapid growth to 130 million tonnes could not be ruled out. The industry was diverse, with a large number of plants --

many of them small-scale -- scattered throughout the country. Currently, twenty-two plants had production exceeding 1 million tonnes; the three largest enterprises -- Baoshan, Anshan and Shougang -- had each produced more than 8 million tonnes of crude steel annually. The industry comprised state-owned integrated mills, which served the entire market, and local mills, which were run by provincial authorities and principally served regional needs. The local mills accounted for about 30 per cent of crude steel production. While the Government played an important role in co-ordinating investment and related activities at the state-owned mills, the local companies were more independent. These enterprises were highly competitive and tended to be more flexible than the state-owned companies overseen by the national Government. Information on market and policy developments was commonly shared by all companies at an annual national conference.

As China was a country that was rich in mineral resources, much of the steel industry's development had relied principally on native resources. In the case of iron ore, however, increasing demand had resulted in the country promoting a policy of actively using foreign ore. Some 41.5 million tonnes of ore had been imported in 1995; as a result, more than one-quarter of domestic pig iron production had relied on imports.

During the 1990s, the steel industry had expanded, with increased emphasis having been placed on the technical renovation of existing facilities. In this context, particular attention had been paid to expanding the use of continuous casting technology. Large volume blast furnaces were built, as were a number of hot strip and wire rod mills; in addition, a number of plate mills were renovated. The industry was expected to continue with its rapid development during the next several years. In this context, the industry would strengthen its co-operation with other countries, with a view towards improving product quality, increasing the range of products produced, lowering costs, and improving economic results. The development of sheet and strip production would be accelerated, raising the share of these products and tubular products to 44-45 per cent of finished production by the year 2000. Crude steelmaking capacity expansion would, however, slow; financial difficulties had already resulted in the postponement of several projects. The industry would maintain its multi-level structure, but the geographic profile of the industry was likely to change, based on shifts in markets and changes in the operating environment (energy, transportation, etc.). Incentives would be provided for those investors who established facilities where economic growth had lagged (i.e., notably in the western and south-western parts of the country). While integrated steelmaking would be developed, efforts would also be made to develop modern electric arc furnace facilities.

Within state-owned companies, enterprise reform and the streamlining of management would be important tasks during the next several years. Some enterprises would be changed gradually to shareholding concerns and limited liability companies to improve their operation effectiveness and efficiency and strengthen their ability to meet foreign and domestic demand. With productivity increasing, surplus labour would be transferred to other economic activities. This would help to reduce labour costs, which had risen to 13 per cent of total costs. Currently the industry employed about 3 million workers, and annual production per worker was about 30 tonnes. The goal was to increase this to an average 150 tonnes by the year 2000; the modern Baoshan works already produced 800 tonnes per worker. Thus far, the major steel companies had been able to implement labour force adjustment programmes successfully. Their experience was seen as providing a useful model for the industry as a whole.

In the field of trade, China was expected to continue to be a sizeable importer of steel products through the year 2000, and beyond. High quality sheet and tube would be the principal products imported. The trade system was itself changing; since 1995, for example, the country had introduced a number of reforms, including a 33 per cent reduction in taxes on imports of iron and steel technology, equipment and

products. Also in trade, it was noted that the country had exported steel in the past, but in limited quantities; by the year 2000, the level was expected to be relatively low.

Malaysia

Malaysia had enjoyed high economic growth since 1986/87, during which time manufacturing increased to one-third of the country's GDP, while the share of services in the economy grew to 45 per cent. In the field of steel, consumption had increased from 2.9 million tonnes in 1990 (164 kilograms per capita) to 7.0 million tonnes in 1995 (347 kilograms per capita). By 2005, consumption was expected to rise to 19.8 million tonnes (777 kilograms per capita); alternative scenarios might vary the outcome in 2005 by some 27 to 30 per cent (plus or minus). The growth assumed that the pace of industrialisation would remain high, and that this would be accompanied by programmes to develop the country's infrastructure. As development proceeded, the ratio of flat to long products was expected to increase, from 47:53 in 1995, to 60:40 in 2005.

The country's steel industry was based entirely on electric furnace facilities, which relied on locally-produced DRI/HBI and scrap (some 65 per cent of which was imported) for raw material inputs. These facilities produced long products, a product domain in which the country was almost self-sufficient. Capacity to produce these products would be increasing from 3.2 million tonnes in 1996 to 6.0 million tonnes in 1998 (in the case of semifinished billets and blooms) and from 3.4 to 5.8 million tonnes (in the case of finished long products). Cold-rolled and plated flat products were also produced in Malaysia, albeit from imported feedstock. A project to produce hot-rolled steel using the SMS thin-slab technology had been approved; there was some question, however, as to whether the final product could be used for automotive applications. The experience of Steel Dynamics in the United States was therefore being watched with great interest. In total, some 37 iron and steel projects worth RM 3.4 billion (approximately \$1.4 billion) had been approved by the Government in 1995.

With trade being liberalised, the Malaysian steel industry would be facing challenging times. There was a recognition that efficiency and productivity were becoming increasingly critical, but that competition was based not only on prices, but also on finding ways to improve production techniques and develop new products. In 1995, imports (some 54 per cent of which were sheet products) had increased to 5.7 million tonnes, while exports (principally pipes, galvanised sheets and long products, respectively) had reached 780,000 tonnes. Export demand was expected to remain buoyant due in large part to a decline in the competitiveness of foreign steel suppliers in traditional steelmaking areas. Imports of flat-rolled products would be declining with the commissioning of a hot-rolled plant and plate mill in the near future.

Thailand

The growth of the Thai economy had resulted in a substantial expansion in steel consumption in recent years, from 7 million tonnes (approximately 125 kilograms per capita) in 1991, to 12 million tonnes in 1995 (200 kilograms per capita). By the year 2000, further growth, to 19.2 million tonnes (300 kilograms per capita), was envisaged. As the industry was relatively small, a relatively high percentage of steel had to be imported. Currently there were 13 EAF-based rolling mills, with a combined annual capacity of 2.5 million tonnes. As domestic scrap resources were limited, some 75 per cent of the country's scrap needs for the electric furnaces had to be imported.

In addition to long products, the country had, since 1993, been rolling sheet products from imported feedstock. Two facilities were operational: the 160,000 tonne-per-year cold-rolling stainless

rolling mill brought on-line in 1993, and a 2.4 million tonne per year hot strip mill that was commissioned in 1994. In the future these two companies were expected to develop steelmaking capacity as well. Some 500,000 tonnes of plate capacity had also been added in the country, during 1995.

As the Thai steel industry was privately held, the Government's role had been limited to taking supportive measures to help achieve a higher level of self-sufficiency. Its activities included regulating existing producers, encouraging new projects and setting tariffs. Investment was overseen by the country's Board of Investment and the Ministry of Industry. Permits were issued by the Ministry of Industry, with the approval of Office of Environmental Protection and Planning (for those projects in which production would exceed 100 tonnes per day). When, in the 1980s, it became apparent that the country's steel capacity should increase, the Government had provided financial incentives, assistance for land acquisition and infrastructure, and modified tariffs with a view towards protecting the domestic industry.

In 1988, some forty firms applied for steelmaking projects; five of the firms were approved by the Board of Investment for special promotional status. In the case of flat products, the Board stipulated that no licenses would be issued for competing firms for a ten year period; for other projects no further licenses would be issued for five years;. The promotional status provided companies with:

- tariff exemptions for imports of plant and machinery;
- reductions in tariffs on raw materials for up to three years; and
- tax exemptions for eight years, with reduced rates to apply for an additional time period.

Currently conditions had been liberalised so that any firms could submit investment proposals. In the area of raw materials, the country was concerned about scrap shortages. It had therefore granted promotional status to five sponge iron projects, with a combined capacity of 6.15 million tonnes.

In the field of trade, tariffs ranged from 1 per cent on raw materials, to 3 to 10 per cent for most steel products, the exception being wire rod for drawing, which carried a 17 per cent tariff. In addition to the tariffs, the Board of Investment had imposed temporary surcharges on imports of four types of products for a one year period commencing 21 August 1996. The surcharges were imposed in response to allegations of dumping and in light of the industry's poor financial results. The surcharges were imposed as an interim measure, while awaiting the implementation of antidumping laws and regulations. Waivers to the surcharges were possible, if justified.

Other issues

Trade and competitiveness

The discussion under this item touched on a number of other issues, a number of which related to trade and competitiveness. There was agreement that the principal challenge facing steel in the future was vis-à-vis competing materials, and that the industry would have to work closely together to promote the use of steel as the material of choice. There was also agreement consensus that dumped and subsidised imports had posed problems in the steel sector. The trade remedies prescribed under the WTO were discussed. While no Workshop participant challenged the nature and basis for these remedies, some

objected to the manner in which they were applied, and the effect that formal proceedings had on trade, even prior to any preliminary findings .

On the issue of competitiveness, one participant noted that technical proficiency should not be the sole criteria employed to assess competitiveness. Exchange rates were an important factor that could explain why producers in, for example, eastern Europe and the former USSR were currently exporting successfully. In looking towards the future, these same countries had to be conscious of the likely changes that would occur in these exchange rates, and the effect this would have on their competitiveness.

Globalisation

Foreign investment

Workshop participants discussed a number of issues related to globalisation in the steel industry. Although steelmakers had lagged behind other industries in investing in foreign facilities, there had nonetheless been increased activity in recent years. With the recent privatisation of the industry in many countries, limitations on foreign investment had been relaxed -- as a result, such investment could well expand.

To date, cross-border partnerships had focused on finishing facilities, primarily in the area of rolling and coating operations. Investment in these projects was on a far smaller scale than would be required for primary steelmaking, which helped explain why investment interest was higher in the finishing facilities. The lower investment also tended to lower companies' risk, or exposure. During the 1980s, much of the foreign investment had been directed to North America; by 1991, for example, some 25 per cent of US steel shipments had originated from mills in which foreign investors had an interest. More recently, activity was growing in the Asia-Pacific area.. With Japanese manufacturers establishing operations offshore, steelmakers had been obliged to follow suit.

The character of foreign investment could, however, be changing with the expansion of small-scale mini-mills. Foreign investment in such mills was already been increasing in the United States, and could well become more common in other parts of the world.

Globalisation was not, however, occurring uniformly world-wide. In India, for example, considerable foreign interest had been shown in mining properties, while little had been shown in steelmaking. Of the \$16 billion to be spent on steelmaking, only \$700 million had involved foreign investors. Similarly, in Brazil, privatisation of the industry had basically involved domestic investors. Within western Europe, globalisation had occurred, but, as was the case elsewhere, it lagged considerably behind other sectors.

It was suggested that further attention be paid to the forces driving the globalisation as they had important implications for steel trade. At the same time, there were a number of socio-economic issues to be addressed. If, for example, investment was driven by a desire to avoid a country's labour laws, it would be important to explore the feasibility of a code that multinational corporations would follow vis-à-vis their employment policies and practices in foreign countries. Environmental issues and the effects of globalisation on the employment and unemployment situation in countries also had to be examined.

International co-operation

In the field of steelmaking technology, it was noted, the steel industry had long been globalised in the sense that such technology had been freely available; the highly competitive state-of-the-art facilities in developing countries was evidence of this. More recently, co-operation among the world's steelmakers was intensifying in other areas. With the globalisation of the automotive industry, for example, steelmakers had found it to their mutual interest to work together to develop and promote steel products to meet the needs of these, and other, international customers, without respect to the location of their plants. This was critical if steel was going to maintain its position vis-à-vis competing materials. Interestingly, a group of more than 30 steel companies from around the world were participating in a project to produce ultra-light steel for use in automobiles. Another aspect of globalisation involved the education and training of young steel managers, via a three-year programme managed by the International Iron and Steel Institute. It was interesting to see to what extent the management culture was converging, and to what extent issues and challenges were being viewed from shared perspectives.

Steel trade issues

Background

Steel trade had increased markedly during the 1990s, increasing its share of production from 25 per cent in 1990, to 35 per cent in 1995. Both the quantity and share were, however, expected to ease in 1996 and 1997, as increased domestic consumption in a number of regions would reduce the incentive and/or need to export. One of the features of international steel trade in recent years had been the marked increase in the size and frequency of shifts in trade flows. Both the Peoples Republic of China and the United States had, for example, experienced record imports, then record exports, within the space of one or two years. Moreover, net exports from the European Union had surged, then fallen markedly during the 1990s, while exports from the European economies in transition had risen to the point where they were accounting for over 50 per cent of production.

The question was whether the sorts of shifts that had occurred were isolated incidents, or whether they were characteristic of what could be expected in the years to come. The outlook was not clear in this regard. It would be influenced by a number of factors, such as reductions in steel tariffs and non-tariff barriers, exchange rates, the expanding role of minimills, technological developments, and issues related to energy and the environment. At the same time, the trading environment would be affected significantly by the changes that had been made in the multilateral trading system through the Uruguay Round agreements. What seemed clear was that steel trade remained a sensitive issue that was receiving increased attention in a growing number of countries.

Multilateral issues

In the context of the Uruguay Round trade negotiations, considerable liberalisation had occurred in steel. Some twenty countries had agreed to eliminate their tariffs on steel products over the next ten years, while a number of others had pledged to lower their respective tariff levels. In addition, under the new Agreement on Safeguards, informal "grey-area" measures, such as voluntary restraint agreements and trigger-price mechanisms, would be prohibited. These developments, combined with growing globalisation, privatisation and the liberalisation of trade in key steel-consuming industries, had provided an environment which would strengthen world steel trade. For the benefits to be fully realised, it would

be important for governments to refrain from supporting inefficient or redundant capacity, and to refrain from providing investment incentives in steel. During the Workshop there had already been discussion of the need that many countries felt to become self-sufficient in steel. To the extent that this resulted in overinvestment in facilities, overproduction could occur, which would put downward pressure on prices, which, in turn, would likely result in trade frictions. The presentation made by the Secretariat suggested that this was in fact occurring as capacity would be growing more rapidly than consumption over the next several years.

Many countries had expressed interest in addressing the specific problems in steel through a multilateral steel agreement (MSA) that would go beyond existing international rules and agreements in disciplining state aids to steel and removing barriers to trade. Informal negotiations had been initiated in the context of the GATT in 1990, but it had not been possible to conclude an agreement. Even with the reforms embodied in the WTO, there was still consensus that an MSA was needed. Presently, efforts were focusing on a more limited agreement that would cover specialty steel products (MSSA). Thus far discussions had occurred principally between the United States and the European Union; once a framework had been agreed, it was their intention to broaden the discussion to include other countries. If successful, it was hoped that a final agreement would be implemented in the WTO. It was hoped that success in the MSSA negotiations would provide a basis for a more comprehensive agreement that would cover carbon steel. Whether there would be a convergence, however, was not an issue which was currently being addressed.

Workshop participants that took the floor supported the idea of having an MSA, as it could work towards providing a more open and fairer competitive environment. There was some hesitation, however, over the need for the more limited specialty steel agreement. Comments were also made on the results of the Uruguay Round. While the international trading environment had been strengthened through the revised dispute settlement procedures and other reforms, some felt that there were problems associated with antidumping and countervailing duty actions persisted. The rules had been changed, but each country could still implement regulations in a discretionary fashion.

The situation in trade

Europe

The emergence of the area comprising the former Soviet Union as a major exporter of low-priced steel products was providing challenges to steelmakers world-wide. In some instances antidumping cases had been filed to address the disruptive effects that these exports were having on foreign markets. In the case of the European Union, a somewhat different approach was being used. Already steel imports from the NIS area had risen significantly in recent years. With the exception of certain imports from Russia, Ukraine and Kazakhstan, trade was free. In the case of the three countries cited, limitations had been imposed on a limited number of products. The limitations were seen as a pragmatic way of providing access to the European market while the industries in the transition countries were being restructured. The limitations, which were being liberalised over time, were, in a sense, in lieu of addressing the situation through antidumping complaints. Had such complaints been filed, they most likely would have been successful; this would have resulted in a sharp decline in imports from the area. The policy approach was similar to one that had been used, or was being used, by a number of countries in other areas (such as aluminum and uranium).

Asia-Pacific area

The economic situation in the Asia-Pacific area had changed significantly during the past decade. The changes were particularly evident in eight countries in East Asia -- namely China, Chinese Taipei, Indonesia, Malaysia, the Philippines, the Republic of Korea, Singapore and Thailand. In the case of steel, rapid industrialisation had resulted in a sharp increase in steel production and consumption. This had also had a significant effect on trade. In 1993, imports had risen to 76 million tonnes, compared to 11 million tonnes in 1985. While galvanised sheet imports had risen by less than 2 million tonnes, imports in three other product categories -- namely semifinished steel, long products and hot- and cold-rolled sheets -- had each increased by close to, or more than, 20 million tonnes. The increase in imports had been accompanied by a diversification of supply, with the share of intra-regional imports (which included those from Japan) declining from 74 per cent to 34 per cent. The European transition economies had emerged as the second leading regional source, increasing their share of imports from zero to 27 per cent, while imports from western Europe and Latin America also increased their shares, by six percentage points each (to 16 and 10 per cent, respectively). The shifts in suppliers were most pronounced in semifinished steel and long products, and least evident in galvanised sheet, where most trade remained intra-regional.

Exports from the eight countries had also risen, from 7 to 15 million tonnes, with most of the increase occurring in hot- and cold-rolled sheets. Unlike imports, regional trade had become more prominent, accounting for 73 per cent of total foreign shipments (including shipments to Japan), as compared to 40.5 per cent in 1985. Whether the filing of unfair trade cases outside the region had intensified the shift was disputed. While the intent of such cases had been to penalise unfairly traded steel, it was argued that the threat and/or prosecution of cases in and of itself tended to deter trade.

Rising demand had stimulated investment in the steel industry, particularly in downstream rolling and coating operations. There were, however, efforts in many Asian countries to become more self-sufficient through investment in upstream steelmaking facilities. This strategy was not understood by all Workshop participants. Producers in a number of OECD countries, it was pointed out, would be pleased to be in a position in which other countries shouldered the environmental problems associated with basic steelmaking, while avoiding the substantial sums of capital required to build and maintain steelmaking facilities. In some respects, it seemed that countries pursuing such a strategy could in fact be trading away their comparative advantage. In response, it was pointed out that the comparative advantage enjoyed by west European, American and Japanese producers for many years had diminished. Industries in these areas would continue to experience pressures to adjust. At the same time, it was true that there were no assurances that the capacity being built by the developing countries would be constructed on the basis of their comparative advantage; the provision of state aids and trade protection could certainly be a factor.

The outlook for the Asian-Pacific area was unsettling in a number of respects. During the past decade the area had been a leader in advancing steel trade. As countries in the area developed their own steel industries, however, it was quite possible -- or even likely -- that excess capacity would become apparent, and that countries would take measures to protect domestic industries via import substitution policies, industry assistance and trade restrictions. Changes were already evident in the field of trade. The reports prepared by the OECD on *Developments in non-Member economies*, for example, had documented a number of actions that countries in the area had already taken, or were exploring, vis-à-vis imports. By the year 2000, the likelihood of problems could well intensify, as a narrowing of the gap between the eight countries' production and consumption was foreseen. At the same time, the trend towards supply diversification was seen as reversing. This had important implications for Europe (east and west) and Latin America, which were the leading sources of extra-regional imports.

The challenges facing the industry underscored the need for stronger multilateral disciplines in steel -- which was the goal of the ongoing multilateral steel negotiations. The current framework was, however, seen as dealing principally with the issues confronting the traditional steel-producing countries. There might be value in redesigning the framework to respond more effectively to the issues facing developing countries. In this context, it might be worthwhile to establish a mechanism to facilitate the integration of developing countries into an MSA. To accomplish this, it might be advantageous to set up a special technical fora in the MSA for dealing with these and related issues.

Japan

While Japan continued to be the world's largest steel exporting country, its situation in steel trade had changed markedly during the past decade. With the rise in the value of the yen since the mid-1980s, steel companies had:

- implemented major restructuring programmes that had enabled them to remain internationally competitive, albeit in a more limited sense;
- globalised operations, in order to: (1) take advantage of the strong yen, and (2) effectively service the needs of their domestic customers who had established transplant operations in foreign countries.

The globalisation of operations had focused on the United States in the 1980s, then shifted to Southeast Asia during the 1990s. Most of the foreign investment that had taken place (particularly in the 1990s) was in rolling and coating facilities. These facilities would, to a significant extent, rely on imports from Japan for feedstock.

In the field of exports, Japanese producers had become more selective in the foreign markets and products in which they competed. Marginally profitable exports were being eliminated, and greater attention was being paid to higher value-added products. At the same time, heightened economic activity in Southeast Asia, combined with the growth in Japanese transplant operations, had resulted in a marked increase in intra-regional exports. In 1995, for example, some 80 per cent of exports were to regional markets.

In the field of imports, the Japanese industry had resisted projectionist tendencies during the period of the rising yen. More than 90 per cent of steel imports had entered Japan duty-free under the country's GATT-authorized generalised-system-of-preferences programme, for example, and GATT-related reductions on bound tariffs on steel had been accelerated. As a result of the changing economic conditions, imports had doubled since the mid-1980s, and in 1995 accounted for 9 per cent of apparent steel consumption. The mix of products had changed over time as well, with increases now occurring in higher value-added cold-rolled and galvanised sheet products. Leading import sources (in 1995) included Korea (46 per cent of total imports), the People's Republic of China (13 per cent) and Chinese Taipei (10 per cent).

The situation in steel -- the role of government in selected areas

In the OECD area, governments had often played an important role in supporting the steel industry in their countries. Up until the mid-1970s, most of these policies had been designed to facilitate industry growth. The sharp downturn that had occurred in the market during the 1970s, however,

combined with growth in steelmaking capacity world-wide, changed the situation significantly. With overcapacity threatening the viability of steelmaking communities, governments had taken a series of actions to support the industry and its workers. Much restructuring had since occurred, and industry conditions were far better than had been the case one or two decades ago.

In the non-OECD area, governments had, similarly, played an important role in supporting the industry. State ownership, and trade and financial support had helped spur remarkable growth in the industry. In recent years, however, changes had occurred in the views of non-OECD economies towards their steel industries. Most state-owned facilities in non-OECD areas had been partially or completely privatised, while steps had been taken in many to liberalise steel trade. This included central and eastern European countries, where significant restructuring was occurring.

Policy objectives for steel

While the direct involvement of Government in the industry might be declining, it still played an important role. In Chinese Taipei, for example, the state placed high priority on further development of the industry, which, with the partial privatisation of China Steel Corporation, was being managed privately. In its new role as a moderator or rule-maker (as opposed to a player), the Government had five principal objectives vis-à-vis the industry:

- to increase self-sufficiency in the short term from 50 to 70 per cent, with a longer term objective of complete self-sufficiency -- this would be achieved by providing assistance for land acquisition, water and electricity supply and financing;
- to support increased production of higher-value products -- this would be achieved by encouraging and assisting companies to produce more sophisticated steels;
- to assist the steel industry in providing high quality products to consuming industries so that final manufactured products would be competitive internationally -- special “satellite” relationships between China Steel and downstream industries have been established, with future efforts to be placed on assisting the downstream industries;
- to establish a competitive market -- this would be achieved through the enforcement of competition policy; and
- to establish free and fair trade -- by phasing out steel tariffs and taking actions to deal with dumping issues.

If everything proceeded smoothly the country would be raising its crude steel production from the 1995 level of 14 million tonnes, to 53 million tonnes. In support of this objective, some 16 million tonnes of new production was already under construction.

State ownership and privatisation

The steel sector was one in which governments had often played an active role, both in helping to establish and to safeguard the industry. State ownership had been common, but was being relinquished as part of more general privatisation initiatives that were taking place world-wide. Delegates from the

United Kingdom, Chinese Taipei, France and Brazil commented on their experiences, both prior to and following privatisation.

In the case of British Steel, which had been privatised in 1988, the principal change had derived from new owners, whose objectives focused on the company's return on capital. Without an adequate medium and long-term return, the company would not be able to survive. It had therefore become imperative to identify those segments of the market that the company could maximise its effectiveness, and focus marketing and investment initiatives in them. To maintain international competitiveness, constant attention had to be paid to the company's production costs and, therefore, its efficiency. When the company had been state-owned, much more emphasis had been placed on the role the industry could play in promoting employment opportunities and regional and industrial development. In the 1950s and 1960s in particular, the industry had been viewed as strategic -- which had accorded it special treatment within countries. Times had changed, however, and it was no longer the case that the industry was considered to have strategic importance, at least on anywhere near the scale of the 1950s and 1960s.

The experience of British Steel was shared in certain respects with that of Brazil, where the Government had played a major role in overseeing the development of facilities; management had had little autonomy to make major decisions without close consultation with Government officials. This was not true, however, in the case of the French firm Usinor Sacilor. When state-owned, the company had been run like a private company. The point was that public or private ownership did not by itself alone affect the way companies were managed.

The view that privatisation was a solution to many problems was shared by many governments. In some, there was the hope that the privatisation would facilitate foreign direct investment in the industry. In the case of eastern Europe, however, this had not occurred, and probably would not until investors foresaw an adequate market, and economic advantages.

The growth, or potential growth, in foreign investment in steel and other sectors raised a number of issues. As countries did not share the same labour and environmental standards, for example, there could be a tendency for investment to flow to those areas where costs were lowest and/or the regulatory environment was least burdensome. This could work to undermine the social and economic gains that had been achieved, particularly in the most developed countries. On the other hand, in the case of steel, it was pointed out that labour productivity and efficiency had progressed to a point where labour costs were no longer as determinant a factor of competitiveness as in the past. In fact, with the introduction of more knowledge-intensive technologies, steelmakers were placing increased value on the education and technical skills of the workforce, which was an area in which the more developed countries had an advantage. There would of course continue to be incentives to invest in countries or areas in which costs were relatively low -- in the long term such investment should work towards a convergence of labour standards.

*Competition policies*¹

Through trade negotiations, tariffs on steel and other articles had been reduced substantially through the years. This, combined with strengthened international rules governing antidumping, subsidy

1. Competition policies are measures taken by governments that are designed to maintain open and competitive markets. In addition to anti-trust regulation, the measures would govern a range of other private practices, including export cartels, market share and price fixing arrangements, group boycotts, and the collusive manipulation of product standards.

and safeguard measures, had significantly limited the ability of governments to restrict or regulate trade. In parallel with this progress, however, there had been growing concerns that companies would adopt their own anticompetitive practices to, in effect, protect their markets. This had been noted in the European Commission's recent *Communication to the Council towards an international framework of competition rules*, which proposed addressing the matter through the negotiation of international rules in the WTO. The rules would require countries to adopt suitable competition laws, provide a mechanism for foreign entities to request investigations, and contain a dispute settlement procedure. Longer term, the proposed framework would seek a convergence of competition laws among countries. As there was not sufficient international support for such an undertaking, it appeared that action would be deferred.

At the same time, there was precedent for addressing competition issues on a more limited, sectoral basis. This was occurring in the telecommunications negotiations, and was included in paragraph 4.3 of the draft MSA, which provided for consultations if a country believed it was adversely affected by the anticompetitive practices existing in another country. The problem with the MSA text was that it did not define anticompetitive practices, nor did it oblige countries to adopt laws or regulations to deal with such practices. Nor did it contain dispute settlement procedures.

In addressing competition issues, it was pointed out there was often a divergence between a legal and economic perspective, with the legal perspective often limited to examining issues in a strictly national context. A more comprehensive approach that viewed matters globally was urged. This was all the more compelling in view of the degree to which markets and industries had globalised. Moreover, competition had to be considered in a broader sense from another perspective. In the case of steel, for example, it was not only competition among steel producers, but competition with competing materials -- some of which were more concentrated industries than steel -- that had to be taken into account.

Finance and investment issues

The investment climate in steel varied considerably among countries participating in the Workshop. The collapse of markets in Russia and Ukraine, for example, had made it extremely difficult to attract investment, while the dynamic conditions in many of the non-Member economies attending the Workshop had provided the principal ingredient for success in this area. The overall climate was not, however, the sole criteria considered by investors. In focusing on individual projects, investors were interested in evaluating risk (political, economic and commercial) and, of course, in projecting the financial returns that their investments would yield. In steel, such returns had traditionally been low, due in part to the emphasis that had been placed on "technological" competitiveness; installation of the most advanced equipment did not, it was pointed out, necessarily result in attractive financial returns.

In their efforts to attract investment, companies were urged to place considerable emphasis on preparing effective business plans that included relevant information on markets, corporate structure, and operating and financial conditions.

OPENING COMMENTS

BY

**MR. MAKOTO TANIGUCHI
DEPUTY SECRETARY GENERAL OF THE OECD**

Introduction

It is with great pleasure that I welcome you to this Workshop on steel trade and adjustment issues. This Workshop is one of five being held this year as part of the OECD's Policy Dialogue with the Dynamic Non-Member Economies. The Dialogue, which began in 1989, provides a forum in which OECD countries and their major economic partners can exchange views and share experiences on a broad range of issues.

This is the first Workshop in the Policy Dialogue on steel, and I am very pleased to see the interest that it has attracted. In addition to representatives from countries participating in the OECD's Steel Committee, we are fortunate to have delegates from Argentina, Chile, China, India, Malaysia, Chinese Taipei and Thailand. This is the first contact that the OECD has had with these countries on steel, so I wish to extend a special welcome and express our thanks for your interest. I would also like to welcome the delegates from the Republic of Korea and Brazil, with whom we are already enjoying close co-operation in the field of steel. Korea has participated as a full and active partner in the Steel Committee since 1993, while Brazil is currently in the process of joining. In the case of Korea, we look forward to even closer co-operation over a broader range of issues in the years to come, as a full member of the OECD.

Our work in steel at the OECD has required the support of industry and trade union representatives, so I am also pleased to note and welcome the participation of the TUAC and BIAC in this Workshop, as well as the International Iron and Steel Institute.

Workshop programme

I would now like to turn my attention briefly to the Workshop programme. My first observation is that the timing for this meeting could not be better. Tremendous changes are occurring in the steel industry world-wide, with implications for every country and steelmaker in this room.

First, I would note that many governments have been reducing involvement in their steel industries, through privatisation and through reductions in state supports. At the same time, trade is being liberalised through the reduction of tariff and non-tariff barriers, thereby opening up markets to increased international competition. Moreover, we are in an era in which government de-regulation is gaining widespread support, a development which again is helping to open up markets to more competition. This opening of markets is providing new trade and investment opportunities for the world's steelmakers.

During the Workshop it would be interesting to hear how your industries, in both the OECD and DNME areas, are responding to these changes, and to exchange views on how we could support further liberalisation in the steel sector.

Second, I would note that significant changes are occurring in world steel supply and demand. On the demand side, I understand that steel consumption will likely increase to a record level in 1997, and continue to grow through the year 2000, on a global basis. On the supply side, I understand that steelmaking capacity will continue to grow through the year 2000, particularly in the Asia-Pacific area, but that significant growth will also occur in North and South America and the Middle East. It would be interesting to exchange further information on the nature and extent of shifts in supply and demand patterns, and discuss what the longer term implications would be for steel trade in various areas of the world.

Third, it is clear that environmental issues are receiving increased international attention, particularly in the area of climate change, where countries have agreed on the need to stabilise greenhouse gases. It seems that industries such as steel, will increasingly be asked to find ways to reduce their emissions. It would be interesting to hear more at this Workshop about the situation in different countries, and discuss ways in which we could work more effectively together to respond to this and other challenges in the field of environment.

The next two days will provide us with an opportunity to explore these issues and developments, and others. In the process, I am sure that we will discover a rich diversity of perspectives and points of view on steel issues. I am confident that the increased knowledge and understanding that we acquire will benefit us all, and that it will be a positive step towards longer term co-operation on steel issues.

Conclusion

Before closing, I would like to thank those of you who prepared and submitted background papers. The quality of the information and analysis in these papers is excellent, and will provide an excellent point of departure for our discussions. We would also welcome any statements that you might wish to submit following the Workshop.

I would also like to stress the informal nature of this Workshop. Each of you has been invited to take part, not as representatives of your governments, industries, or trade unions, but in your personal capacity. I sincerely hope that this will help to stimulate a freer exchange of views and information among you.

**MARKET AND INDUSTRY OVERVIEW
THE CURRENT SITUATION AND THE OUTLOOK**

GLOBAL MARKET STATEMENT

BY

**MR. FRANCO MANNATO
ADMINISTRATOR, OECD SECRETARIAT**

1996

WORLD

World steel consumption, which had been rising since 1993, seems to have levelled off in 1996, increasing only by 0.5 per cent compared to 1995 (see Annex). World crude steel production is expected to increase by a similar amount to slightly over 750 million tonnes. World steel trade could be down 9 per cent, accounting for just 24 per cent of world steel consumption compared to 26.5 per cent in 1995.

OECD

After the sharp pick-up in steel demand in the OECD area in 1994, which continued in 1995, 1996 was marked by a decline in apparent steel consumption of about 2.5 per cent, almost 10 million tonnes down on 1995, mainly attributable to the significant reduction in steel stocks which seemed to have finished by the end of the summer.

Steel exports from the OECD area are expected to be down by almost 4 per cent and imports down by more than 8 per cent. Crude steel production for the whole of the OECD area will be 2 per cent down on the 1995 figures, with the decline being greatest in the EU and Japan.

Other market economies outside the OECD area

Steel consumption is expected to continue to rise in all market economies outside the OECD area and the increase may be just over 4 per cent.

In these areas, net steel exports from Latin America are expected to fall and net imports to the Middle East and Asia to rise, albeit moderately.

Crude steel production in all these countries should rise by more than 5 per cent this year, reaching at least 143 million tonnes.

CEECs and NISs

In the CEECs, domestic demand for steel products has generally continued to rise compared to 1995, but major reductions in steel exports seem to have triggered a decline in 1996 in crude steel production of roughly 6.5 per cent in all of these countries. In the NISs, apparent steel consumption is expected to increase only very slightly this year. The situation seems to be slowly improving in Russia, but is still very difficult in some other republics, such as Ukraine. The fall in steel exports from the exceptionally high 1995 level has led to a stagnation, or even slight decline, in crude steel production in these countries as well.

Planned economies

In China, after two years of significant decline, apparent steel consumption is expected to pick up and to increase by about 5 per cent in 1996 (up 4 million tonnes). The process of adjusting the very large stocks accumulated in 1993 in China, which seems to have ended, should lead to a decline in exports. Crude steel production is expected to be 5 per cent up this year on 1995 at 96 million tonnes.

1997

WORLD

After a relative stabilisation of the market in 1996, world steel demand could pick up in 1997 due to the effects of an economic upswing in the countries where growth was low in 1996. The increase in apparent steel consumption may reach 4 per cent, representing 25 million tonnes of finished products. This would trigger a roughly equivalent rise in crude steel production to around 781 million tonnes, the highest level since the record output of 1989 (785.8 million tonnes). World steel trade may continue to decrease slightly by 1.5 per cent, reflecting the additional capacity that has come on stream, and should account for no more than 23 per cent of the world steel market.

OECD

If the expected upturn does occur, particularly in certain European countries, apparent steel consumption in the OECD area could rise by 2.4 per cent in 1997. This projected rise also allows for a possible increase in steel stocks in countries which had experienced significant stock reduction from mid-1995 to the 3rd quarter of 1996. Steel exports from the OECD area are expected to fall by nearly 5 per cent, but imports will decline still further by nearly 8 per cent. After declining in 1996, steel output is expected to rise by between 2.5 and 3 per cent in 1997, ten million tonnes up on 1996. The pick-up in demand will likely be accompanied by price rises for many steel products.

Market economies outside the OECD area

In the area comprising all the non-OECD market economies, steel consumption will continue to rise steadily in 1997, spreading across all regions in the area: Asia, the Middle East, Latin America and even Africa. Net imports to the area will remain close to the 1996 level. Crude steel production in the area is expected to remain up and could rise by 5 per cent to about 164 million tonnes.

CEECs and NISs

In the CEECs, steel demand is expected to be more buoyant in 1996 and could increase by 2 million tonnes. The increase will not be spread uniformly across the CEECs. Net steel exports from these countries will still be slightly down on 1996, and crude steel production should start to rise again by around 5 per cent.

In the NISs, 1997 may be the year when the steel market takes off again. However, even if apparent steel consumption, fuelled by Russia and other countries, were to increase by 10 per cent on 1996, the increase would represent only 3.5 million tonnes and, assuming that this were the case, total consumption in the NISs would represent only 37 per cent of the USSR's steel consumption in 1988. The pick-up is likely to lead to a fall in NIS steel exports, whilst crude steel production could increase by about 3 per cent.

Planned economy countries

In China, the Secretariat forecasts that steel demand will continue to rise by 5 per cent in 1997. As a result, net steel imports should rise slightly. The Secretariat also forecasts that crude steel production in China will rise by a further 5 per cent and in 1997 could be in excess of 100 million tonnes.

2000

What follows is a brief overview of the outlook for the steel market in the year 2000.

Steelmaking capacity

A recent study by the Secretariat found that world steelmaking capacity can be expected to grow rapidly between 1996 and 2000. The expectation is that capacity will expand by 156 million tonnes in the years to come, an increase of 15.6 per cent.

In the OECD area, steelmaking capacity is expected to increase by about 3.3 per cent, i.e. an additional 17 million tonnes.

In the CEECs and NISs, steelmaking capacity is expected to rise by about 2.5 per cent, i.e. by only 5 million tonnes, but these figures do not allow for the restructuring that is expected to occur in some countries, such as Ukraine, which could lead to reduced capacity in this area.

In contrast, there is expected to be a sharper rise in steelmaking capacity in the planned economies, representing an increase of over 34 million tonnes (up 29 per cent).

The growth in non-OECD market economies is expected to be even more impressive. Steelmaking capacity should rise by nearly 53 per cent, an increase of roughly 100 million tonnes of which 78 million tonnes of which will be in Asia where capacity is expected to more than double.

The steel market

The Secretariat's preliminary projections for the steel market in the year 2000 are as follows:

Apparent world steel consumption should be about 715 million tonnes of finished products, an increase of almost 11 per cent on the projections for 1996. This consumption would correspond to crude steel production of roughly 830 million tonnes. The overcapacity with which we are now faced is expected to increase still further and the ratio of production to capacity, which currently averages 76 per cent, could drop to about 71.5 per cent.

At this point, Mr. Chairman, ladies and gentlemen, the Secretariat would like to draw participants' attention to the following figures:

- If steelmakers try to maintain production at a level comparable to the average level of capacity utilisation in recent years, crude steel production could reach about 870 million tonnes by the year 2000.
- If crude steel demand does not exceed the 830 million tonne projection, then the world steel market could have to contend with a surplus 40 million tonnes in the year 2000.
- The consequences of this situation are difficult to imagine, not only in terms of the impact on steel prices but also the problems with which interantional trade in steel would find itself confronted.

ANNEX

Steel Market Developments

- Steel Demand in 1996
 - Slight increase (+0.5%) at World level
 - Decline (-2.5%) for total OECD
 - Healthy (+4%) for non OECD market economies
 - Improving (+7%) in central & eastern Europe
 - Remaining weak in the NIS
 - Picking up again (+5%) in China

Steel Trade in 1996

- World trade in steel decline by 9 %
- OECD steel exports -4 %; imports -8 %
- Latin America net exports decline slightly
- Economies in transition: drop in exports
- In China, steel exports decline too

Crude Steel Production in 1996

- At world level (+0.5%) to 751 million tonnes
- OECD: decline by 2%
- Non OECD market economies: increase by 5.3% to 143 million tonnes
- Central & eastern Europe -6.5%
- Stagnating in the NIS
- Increase by 5% in China to some 96 million tonnes

The Steel Market in 1997

- Steel Demand in 1997
 - Strong increase at world level +4%
 - Recovery for the OECD area +2.4%
 - Continuing to increase (+2.9%) in non OECD market economies
 - Central and eastern Europe: +2 million tonnes
 - Recovery in the NIS (+10%)
 - Continuing growth in China (+5%)

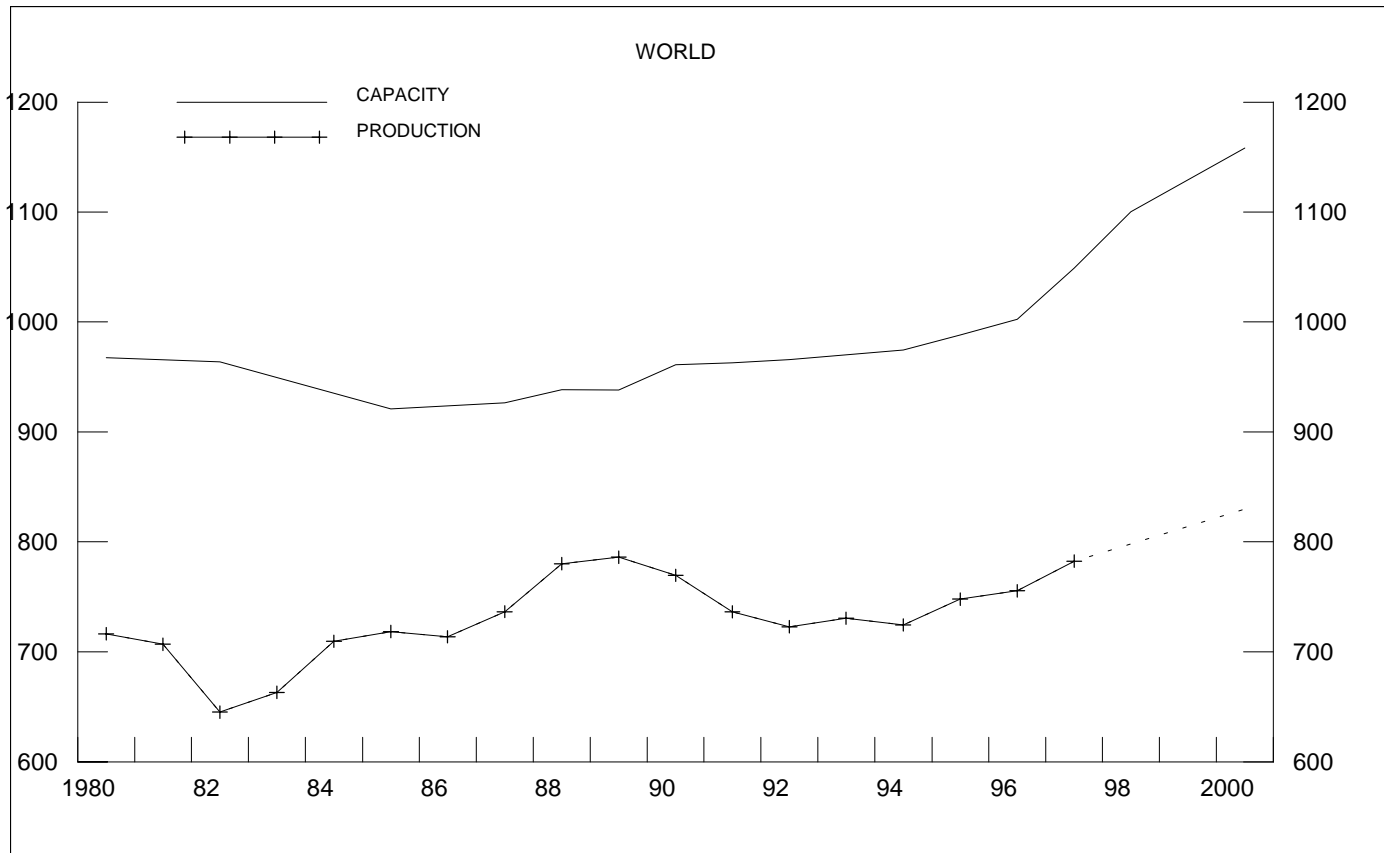
Steel Trade in 1997

- World trade in steel should reduce by a further 1.5%
- OECD steel exports -5%; steel imports -8%
- Net steel imports of non OECD market economies will remain at 1996 levels
- A further slight decline in net steel exports from CEECs and NIS
- Slight increase in China's net steel imports

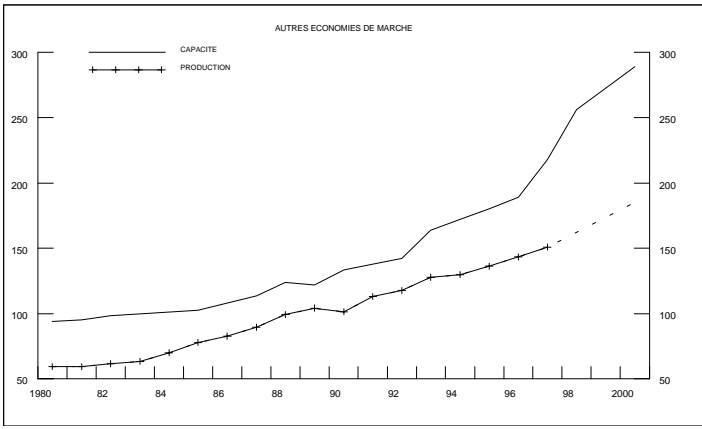
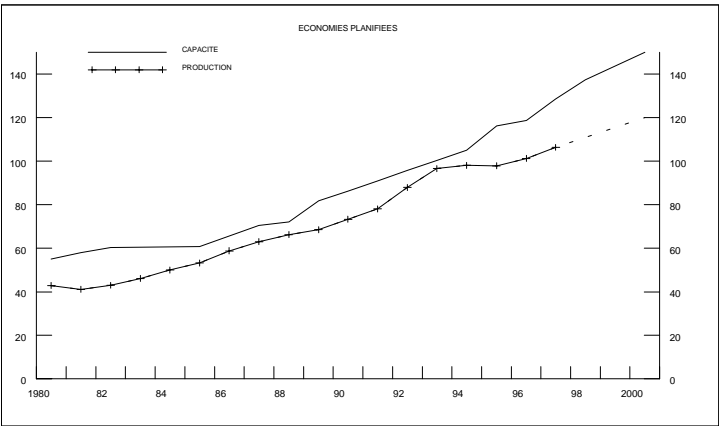
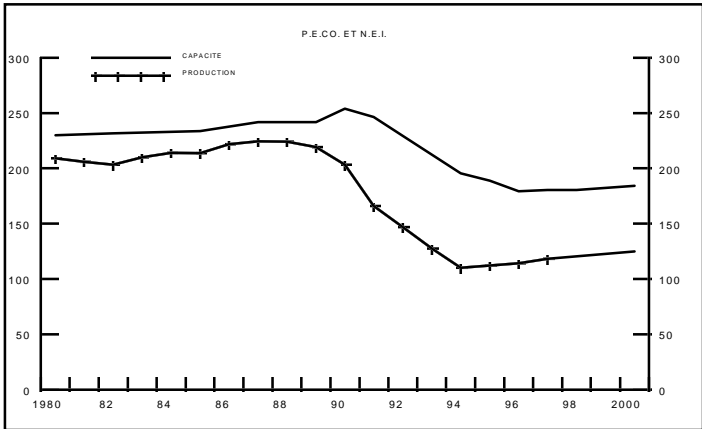
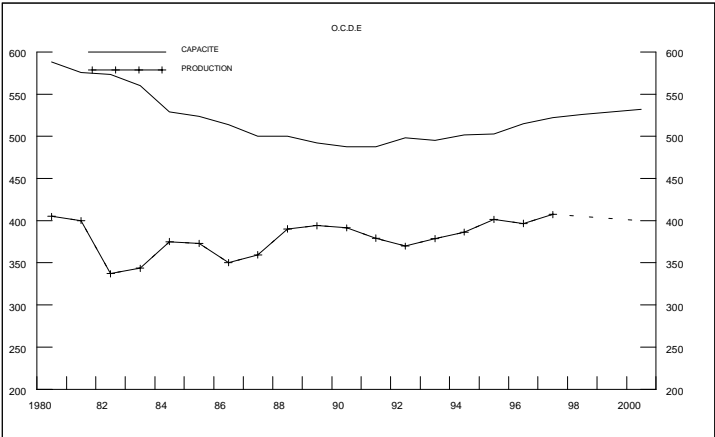
Crude Steel Production in 1997

- A 4% increase in world production to 781 million tonnes
- OECD: +2.5% to 3% (around 10 million tonnes)
- A further increase by 5% in the non OECD market economies to 164 million tonnes
- A 5% increase in central and eastern Europe and a 3% increase in the NIS
- Another 5% increase in production in China

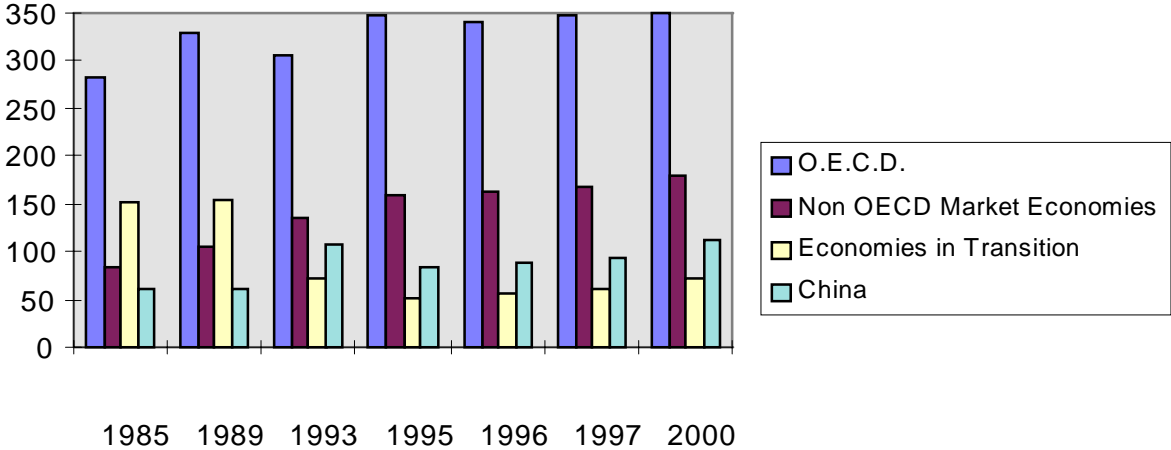
World steelmaking capacity and production



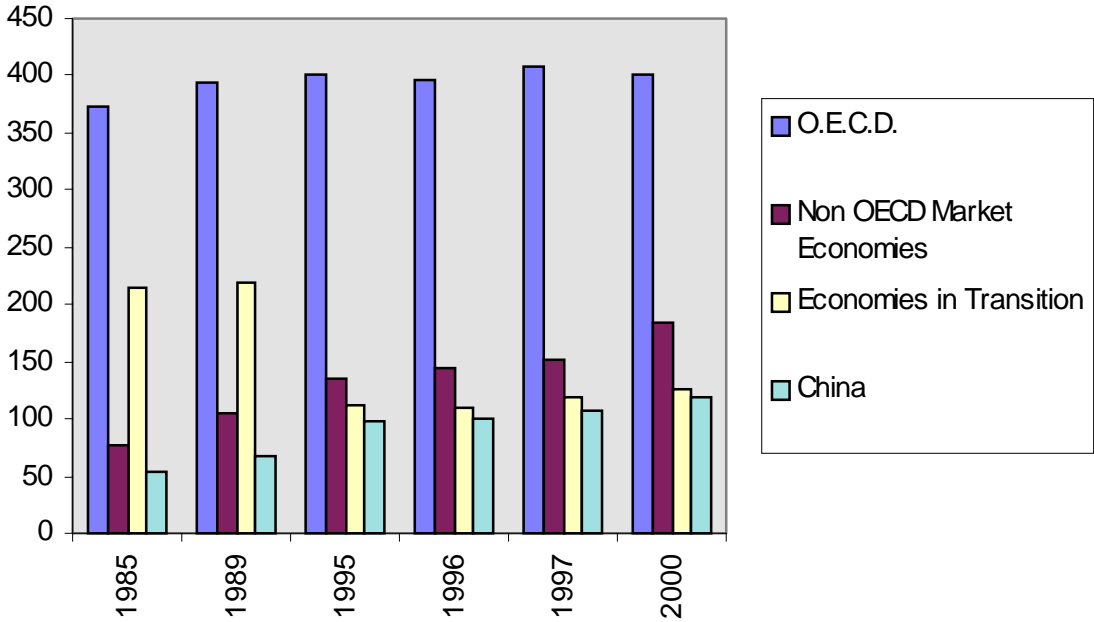
Capacity and production by area



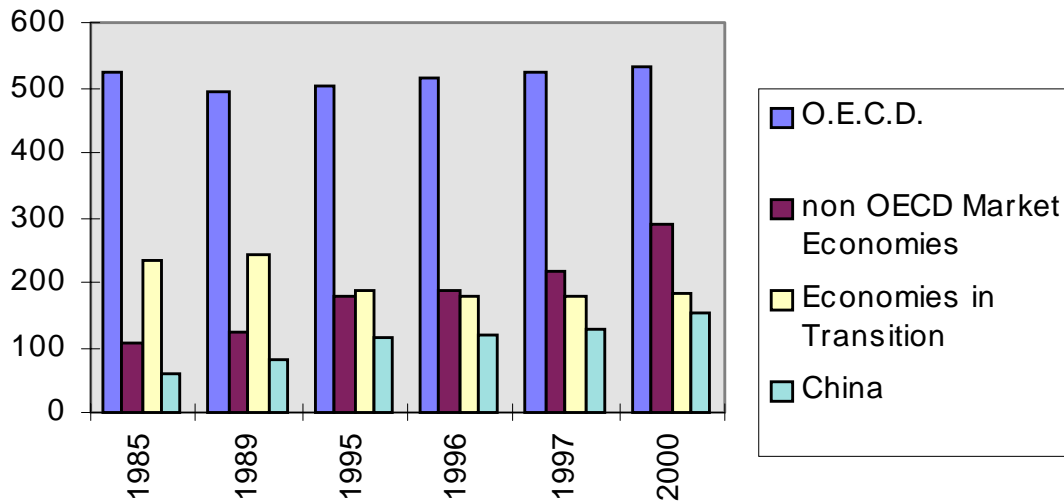
Apparent steel consumption



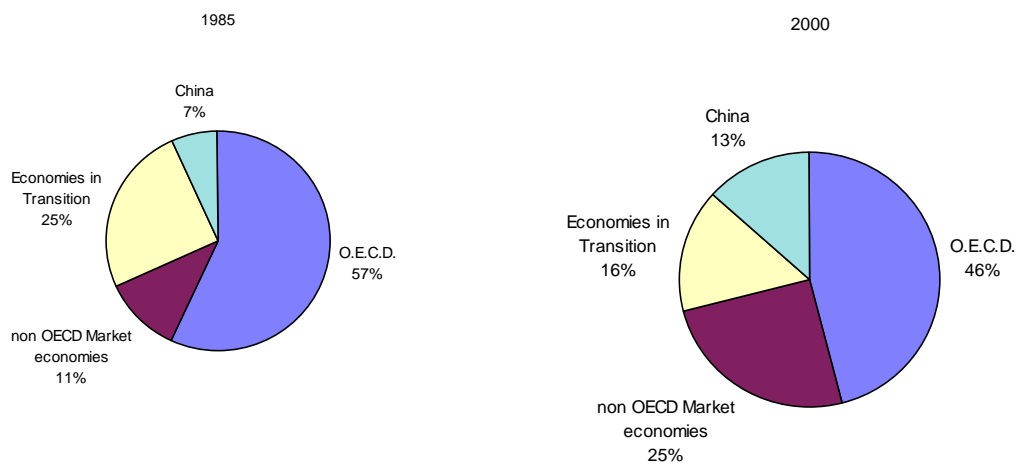
Crude Steel Production



World Steelmaking Capacities



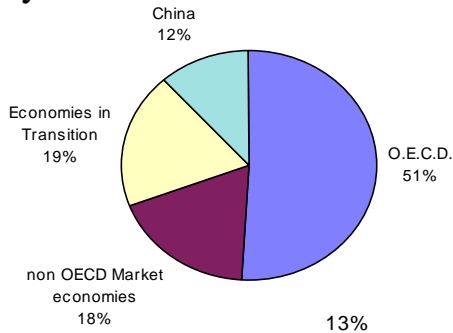
World steelmaking capacities



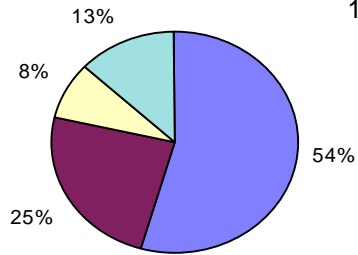
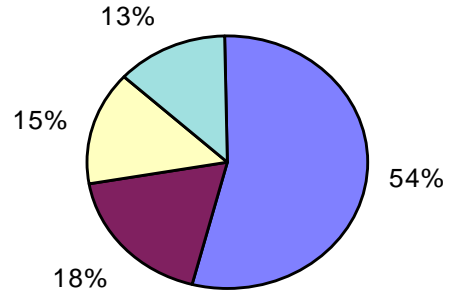
World steel market in 1995

1995

Capacity



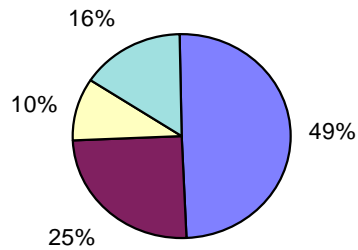
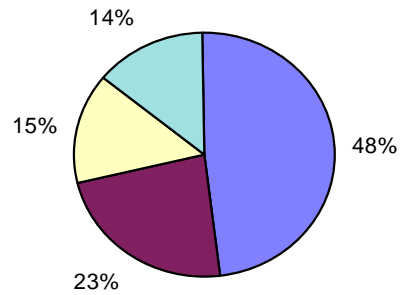
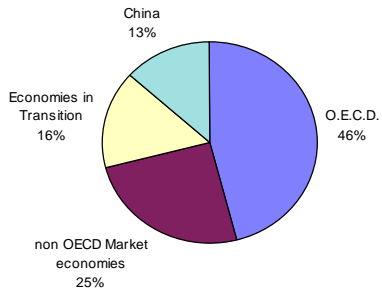
Production



Consumption

World Market in 2000

2000



Consumption

**DEVELOPMENTS IN NON-MEMBER ECONOMIES
(OCTOBER 1995 - MARCH 1996)**

BY

**MR. PETER AVERY
PRINCIPAL ADMINISTRATOR, OECD SECRETARIAT**

The following report on developments in non-Member economies is based on an analysis prepared for the Steel Committee in April 1996. It generally covers the period October 1995-March 1996. It should be borne in mind that it has not been possible to verify that the information provides an accurate account of the situation described in the countries reviewed. Most of the report is drawn from information appearing in the press and other information sources. Please note that in instances in which monetary sums have been converted into US dollars, the conversions have been made on the basis of currency exchange rates prevailing on 15 April 1996.

MAIN POINTS

European economies in transition

The situation in steel in most central and eastern European transition economies improved during 1995, with domestic steel consumption rising by some 18.5 per cent. Exports were virtually unchanged, continuing to account for over 50 per cent of total shipments. Imports rose by 22 per cent, but still remained well below export levels (net exports changed only slightly, falling from 11.0 to 10.4 million tonnes). Actions have been taken over the past several months (or are being studied) to privatise steel facilities in a number of the countries, including Albania, Bulgaria, the former Yugoslav Republic of Macedonia, Poland and Romania.

In the new independent states of the former Soviet Union, significant changes occurred in Kazakstan, which privatised its financially troubled steelworks (Karmet), through the sale of the facility to the international steelmaking concern Ispat. In Russia, increased prices for energy and transport services are raising steelmaking costs rapidly, which, in turn, is beginning to affect exports. In Ukraine, the Government is preparing to privatise (partially) its first steelworks.

Asia

Investment in steel in Asia continues to be strong, but producers, governments and financial institutions in a growing number of countries are reviewing their respective situations to determine whether the rate of expansion should be slowed. Such has been the case in India, Chinese Taipei, Vietnam and, as reported previously, China. In China, the situation in steel trade continues to evolve. The country became a major exporter in 1995, shipping some 9 million tonnes of steel to foreign markets. Principal

destinations included the Republic of Korea, Japan and Chinese Taipei, with shipments also going to Italy, Belgium and the United States. In the field of specialty steel, the situation in China and India is of growing interest. In China, stainless steel consumption is expected to grow from a current level of 500 000 tonnes to 800 000/900 000 tonnes per year in four years. In India, stainless steel production could rise from a current level of 575 000 tonnes per year, to over 1 million tonnes by the year 2000, at which time the country could emerge as a major stainless steel exporter.

Other

The report includes information on developments in Latin America, where Brazilian producers are reviewing investment projects and where privatisation (in Peru and Venezuela) continues, and in Africa and the Middle East, where state-owned Ziscosteel in Zimbabwe is seeking an equity partner to help restructure the company.

CENTRAL AND EASTERN EUROPE

The situation in steel improved in most central and eastern European economies during 1995 (Table 1). Apparent steel consumption in the area rose by an estimated 18.5 per cent, while crude steel production increased by 4.5 per cent. In the area of trade, steel imports rose by some 22 per cent, while exports remained at approximately the same level.

Table 1. **Steel production, consumption, imports and exports in central and eastern European economies in 1994 and 1995**

Country	Crude steel production		Finished steel					
			Consumption		Exports		Imports	
	1994 Mill.tonnes	1995 % change	1994 Mill.tonnes	1995 % change	1994 Mill.tonnes	1995 % change	1994 Mill.tonnes	1995 % change
Hungary	1.92	-3.0	1.11	15.3	1.03	-7.8	0.52	28.8
Poland	11.05	7.8	5.35	20.4	3.71	-4.3	0.83	14.5
Czech Rep.	7.09	1.4	2.82	1.8	3.20	3.1	0.64	1.6
Slovak Rep.	4.00	-7.5	0.84	11.7	3.20	-2.2	0.58	6.9
Romania	5.78	12.8	2.59	36.1	2.67	10.1	0.29	106.9
Total	29.84	4.5	12.71	18.5	13.81	0.4	2.86	22.0

Source: SG/COMM/NEWS(96)22

Albania

Privatisation of Albania's Elbasan steelworks was to be undertaken during the first several months of 1996. The plant has the capacity to produce 150 000 tonnes of bar and rod products, but produced only 15 000 and 18 000 tonnes in 1994 and 1995, respectively. Plans call for increasing production to 22 000 tonnes in 1996, and to 50 000 tonnes within three years. With steel consumption totalling some 200 000 tonnes per year, a substantial portion of steel needs will have to continue to be imported. Russia and Bulgaria have traditionally been the principal sources for imports.

Bulgaria

Raw materials

In January, an agreement was reached by the EU-Bulgaria Association Council on the gradual liberalisation of Bulgaria's scrap exports to the European Union. Under the agreement, scrap exports will be limited to 75 000 tonnes in 1996 and to 150 000 tonnes in 1997, with total liberalisation to occur in 1998.

Privatisation

Bulgaria's mass privatisation programme officially began on 8 January 1996, at which time citizens could register and obtain voucher passbooks. The registration period was to last until March. Two steel facilities are to be partially privatised: Kremikovtzi steel works, an integrated facility with the capacity to produce 2.2 million tonnes of flat and long products per year, and Stamona steel works, a 1.1 million-tonne-per year non-integrated facility that also produces a range of flat and long products. Some 25 per cent of the firms' equity will be sold. The first auctions were initially to be held in March, but the timetable has been delayed by several months. Bulgaria's privatisation laws permit foreign financial institutions to take part in the privatisation programme, provided that they have at least five years' experience in their home country and solid bank guarantees.

Restructuring

Plans to modernise the Kremikovtzi steel works by the year 2004 have been announced. The modernisation will include the installation of a \$150 million continuous caster, the purchase of which will be assisted via a \$34 million loan from the Bulgarian State Fund for Development and Reconstruction. In addition, some \$52 million of Russian rolling equipment will be acquired, with payment to take the form of a credit on Russia's debt to Bulgaria. The total cost of the modernisation, which will also include the purchase of other western European equipment (the caster is Austrian) has been estimated at \$390 million.

The former Yugoslav Republic of Macedonia

The Government of the former Yugoslav Republic of Macedonia is considering privatising the Republic's sole steelmaking facility, Rudnici I Zelezara Skopje. Skopje, which operates with both basic oxygen and electric furnaces, produces a range of flat products. Annual crude steelmaking capacity totals 1.1 million tonnes, but production has been far less than that in recent years, totalling only 300 000 tonnes

in 1995. Exports have been nil. There are reports that the firm's electric furnaces have not been operating due to a shortage of ferrous scrap. Scrap had previously been sourced from Bulgaria, which now has an export ban.

Poland

Raw materials

The first phase of a Polish scrap study was completed in November 1995. Preliminary findings suggested that demand from the growing electric furnace sector and the collapse in imports from Ukraine and Russia had put the market under pressure. In the second phase of the project, which was to begin in December 1995, the study was to consider how the collection and processing of scrap could be restructured so as to eliminate problems.

Foreign investment

The Belgian firm Sidmar has reportedly signed a letter of intent with Huta Katowice, one of Poland's largest steel mills, under which a 50-50 joint venture involving the production of hot-rolled coil products, would be formed. Sidmar would build a thin slab caster and a 2 million-tonne-per year hot strip mill, and would provide technical know-how and management skills. Katowice would supply liquid steel for the new plant and close its slabbing facility when the new facilities became operational (i.e. in early 1999). The joint venture would be one of the largest direct investments in an integrated plant in eastern Europe by a western firm.

Restructuring

Restructuring and modernisation of Huta Labedy, a 350 000 tonne-per year producer of long products, has advanced as an electric furnace and continuous caster have been installed, leading to the closure of two open hearth furnaces. Labedy and Stalexport, a privatised trading company, jointly contributed 32 per cent to the \$70 million investment. Financing was also provided by a consortium of six local banks, and via a low-interest loan from the National Fund for the Protection of the Environment. There were no state loan guarantees, and, as a result, the project had to proceed without supplier credits. Modernisation of the plant's rolling mills has yet to take place.

Modernisation has also occurred at Huta Baildon, a specialty steel producer with some 40 000 tonnes of annual crude steel capacity and 90 000 tonnes of annual finished steel capacity (long products). A new continuous caster has been installed -- the company's first -- and attention is now turning to the construction of a new rolling mill, which is to be financed by Centrozap.

At Huta Lucchini, the Italian Lucchini Group has announced plans to invest a further \$130 million to upgrade its Warsaw steel mill. The intention is to modernise the rolling mills and install additional ladle and electric furnaces. Work in these areas is expected to commence in January 1998, when the first phase of modernisation that is currently underway has been completed.

Restructuring is also taking place at Huta Sendzimira which accounts for more than 25 per cent of Polish steel production. The Polish Industrial Development Agency, together with the EU (via the Phare programme) and officials from Sendzimira have selected Beddows and Company and Beddow's

Polish partner, the Management Faculty of the Academy of Mining and Metallurgy, to develop a corporate plan for the company. Areas to be covered include the company's legal, corporate and management structure, and the technology and investment needs for the future. Work on the project, which began in the latter part of 1995, was scheduled to be completed within 16 months time.

Privatisation

Seven of Poland's smaller steel mills were included in the country's mass privatisation plan initiated in November: These are Huta Zygmund, Huta Batory, Huta Ferrum, Huta Malapanew, Huta Pokoj, Huta Buczka and Huta Zabrze. Under the privatisation programme, every Polish citizen over the age of 18 was able to buy a set of vouchers, and purchase shares in any of 500 companies.

Trade

Trade in steel with the European Union was liberalised in January 1996, when the Polish Government reduced import tariffs from a level of 12 per cent to 9 per cent. The reduction is consistent with the association agreement negotiated by the EU and Polish authorities a number of years ago. In addition, the Polish Government has indicated that in June it will be abolishing a 5 per cent surtax that has been applied to all imports for reasons related to the country's balance of payments situation.

The Polish Government is considering a measure that would require each delivery of certain types of imported steel to be accompanied by a certificate of quality. The certificates would have to be issued by the competent authorities in foreign countries.

Romania

Raw materials

Romania is taking measures to liberalise trade in ferrous scrap with the European Union (exports, it will be recalled, are currently prohibited). As from 31 December 1997, trade will be unrestricted. In the interim, exports of some 100 000 tonnes will be permitted for the 12 month period beginning 1 August 1996. This will increase to 250 000 tonnes in 1997. The liberalisation was announced in early 1996, during the second meeting of the EU/Romania Association Council. The Romanian authorities further agreed to provide the EU with detailed information on the export licenses issued and deliveries, on a twice-yearly basis.

At the same time, the situation in scrap was to be studied in a project sponsored by the EU. The aim of the study, which was to begin in January, is to identify problems in scrap supply, and develop recommendations on how the scrap industry can operate more efficiently.

Privatisation

Romania's largest steel producer, Sidex Galati, is to be privatised further (30 per cent of the company is already owned by one of the country's private ownership funds). The privatisation will take place in three stages. By 31 March, Romanian citizens over 18 years of age were to be given an opportunity to decide which companies they would like to invest in. In the second stage, persons would

be allowed, through 30 April 1996, to place their vouchers in one of the country's five investment funds. As the Government considers Sidex to be a strategic company, it (the Government) will retain at least 51 per cent ownership. According to the State Ownership Fund, the 51 per cent share could eventually be sold to foreign interests.

Slovak Republic

On 3 April 1996, the Slovak Constitutional Court annulled a law under which the Government established the right to veto key decisions in privatised companies. The ruling would affect the country's large integrated steelworks, VSZ (majority ownership is held by private parties). Under Slovak law, the Government has six months to revise the law to meet the court's ruling.

VSZ was to receive a standard Eurodollar loan not underwritten by the state -- the first Slovak firm to have done so. The loan, which was to be provided by Merrill Lynch Capital Services, was to be used to invest in new equipment.

NEW INDEPENDENT STATES OF THE FORMER SOVIET UNION

Kazakhstan

Continued problems at the Karaganda steelworks resulted in the Government declaring the company bankrupt in October 1995. Existing contracts were cancelled, and all foreign advisors and technicians departed. Ispat International was subsequently engaged to manage the plant, as from 1 November 1995.

The Government then elected to privatise the mill, which was purchased by Ispat. Under the purchase agreement, Ispat was required to pay for 60 per cent of the plant within one year, while taking responsibility for immediate debts of \$50 million and wage arrears of \$11 million. The company, now called Ispat Karmet, will reportedly be targeting a number of foreign markets for its sales. Neighbouring countries such as China, Iran, Turkey and Egypt have high priority, while Korea and Thailand would also be targeted. Initially only a small percentage of output would be sold to Russia.

In February 1996, further information became available on Ispat's commitments and plans for Karmet. The company reportedly agreed to pay \$450 million for Karmet's assets (including certain liabilities). An additional \$500 million would be spent over five years to modernise the plant and extend its marketing network. In modernising the facility some 10 000 of the 38 000 employees were expected to become redundant.

Russia

Raw materials

According to the Russian Metallurgy Committee, Russian iron ore deposits are on the whole characterised by poor quality, complex mining and geological conditions, and a severe operating environment compared to other areas. The average iron content is 35.8 per cent, which compares to about 60 per cent in many other major producing countries. The cessation in 1991 in commissioning new

capacity and the difficulty in attracting foreign investment are resulting in a deterioration in conditions. For most operating mines the maintenance of capacity is also becoming a problem because of rising costs.

With a view towards improving the situation, the Metallurgy Committee has proposed a programme that provides for the technical re-equipment of mines, the preparation of new and existing sites for stripping, and the completion of earlier projects. Implementation of the programme has begun, but will require state support to be successful (in the form of credits and favourable tax treatment).

Industry conditions

According to the Russian State Metallurgy Committee, privatisation of metallurgical enterprises is nearing completion as over 90 per cent of the industry is in private hands. The industry does not receive any subsidies, and in fact faces a tougher economic environment than do many western firms. Russian producers, for example, are said to pay 10 per cent more for coking coal and although they pay somewhat less for electricity than do western European companies, prices are twice as high as those prevailing in the United States. Russia's tax regime was cited as another disadvantage, as were high transport costs. These conditions were seen as constraining exports. Past cases of dumping, it was noted, reflected the instability of the economy, when traders, brokers and other intermediaries ended up with stocks of metal at non-market prices. Increased economic stability and budgetary constraints were seen as limiting future instances (of dumping).

State holding company

The Government created a state holding company called Rosmetal in 1995, to manage the shares the Government retained in metallurgical enterprises. Part of the purpose of Rosmetal is to create a more stable structure in the metallurgical industry that will, in turn, reduce individual company risk for investors and provide a more solid basis for foreign exchange credit financing, including Government loan guarantees. The company's shareholdings comprise about 2 per cent of the sector in terms of capitalisation. The Government will control 52 per cent of Rosmetal, with the remaining 48 per cent to be auctioned -- in mid-year or so --- to investors (both foreign and domestic).

Foreign co-operation

In the latter part of 1995, Russia and the EC Commission were discussing the possibility of creating a contact group to serve as a forum for addressing a broad range of issues related to steel trade, restructuring, research and development, social issues and environmental problems. The group is also tasked with the monitoring of progress made in technical assistance between the EU and Russia. The group consists of a ten-person standing Committee, five of whom are from the EU and five from Russia. Chairmanship of the group, which is to meet twice-yearly, will alternate between Commission and Russian officials.

The results of the EU-sponsored study of the Russian steel industry are to be discussed at a seminar to be held in the Fall of 1996. The aim of the study, it will be recalled, is to establish how the steel mills could position themselves to compete effectively in world markets.

A separate business plan prepared by the French consulting firm Sofres for Asha Iron and Steel Works concluded that the firm, which has annual crude steel capacity of 450 000 tonnes (for the

production of stainless and carbon flat-rolled products), should close its steelmaking facilities and become a re-roller. This was at odds with the firm's wish to concentrate on pig iron production using new technology.

Privatisation

A third attempt to privatise a portion of Zapsib Metallurgical Combinat, a 6.9 million tonne integrated steel producer (also known as West Siberian Steel Corporation) was to be made in April 1996. Two previous attempts, which were based on a shares-for-loans arrangement, were unsuccessful. Under the shares-for-loans approach, shares are auctioned in return for loans from financial institutions to cover the Government's budget deficit. The arrangement is reportedly unpopular with steelmakers since they need investment funds, but receive none of the money raised by the share sales. A 14.8 per cent share in Novolipetsk was sold in December under the plan.

The third offering for Zapsib will abandon the shares-for-loan approach; moreover, it will be open to foreign bidders. The new owners will, however, be required to invest \$75 million in the company over the next three years and will have to assume debts of around 30 billion rubles (\$6.1 million).

Trade

Pursuant to an agreement reached with the International Monetary Fund, the Russian Prime Minister has signed a decree abolishing all export duties, except those applied to crude oil, as from 1 April 1996.

In lieu of definitive antidumping duties of 40.1 per cent, major Russian producers of grain-oriented electrical sheets have agreed to limit their exports to the EU, while observing certain price guidelines. The undertakings will be overseen by Russian authorities, who will issue export licenses to the producers.

Ukraine

Restructuring

Modernisation of the Ukrainian steel industry is a major undertaking. It is estimated that 65 to 70 per cent of steelmaking capacity needs to be replaced -- this includes over half of all the coke oven batteries, 89 per cent of the blast furnaces, and 92 per cent of the country's open-hearth furnaces. In the case of Krivoy Rog steelworks, a 10.7 million tonne per year steel producer, modernisation has included the installation of a new wire rod mill. Funding for the mill came from a line of credit provided by the German Government in 1992 to modernise five Ukrainian metallurgical enterprises.

In December 1995, it was reported that the Ukrainian Government had approved a plan to stimulate growth in the mining and metallurgy sectors. Under the plan, special tax benefits would be conferred to foreign firms investing in the industry.

Tax and trade measures

The Ukrainian Government has introduced a 5 per cent sales tax on steel and scrap. The tax is to be applied to domestic sales of steel and scrap, and to exports of scrap. The proceeds from the tax are to be paid into a newly established Energy Complex Development Fund. The Fund is to be used to help overcome chronic energy shortages, which have had a significant effect on the steel industry.

The general tariff rate on steel imports included in chapter 72 of the harmonised system is 10 per cent; the most-favoured-nation, special rate, however, is 5 per cent. Additional charges on imports could include relatively high excise taxes and a 20 per cent value-added tax.

A January 1996 report indicates that the Ukrainian Government issued a directive aimed at increasing exports of higher value products, resulting in a lack of steel billets for export.

Privatisation

Ukraine is preparing to privatise a portion of its Azovstal Iron and Steel Works. The plant, which has annual crude steel capacity of 6.8 million tonnes, produces heavy plate and structural shapes. The value of the mill, which operates both basic oxygen and open-hearth furnaces, was estimated at \$367 million (or about \$54 per tonne of capacity) in July 1995. Under the privatisation plan, which must be approved by three governmental entities (the State Property Fund, the Ministry of Industry and the Cabinet of Ministers), the Government will retain 24.2 per cent of its 62 per cent holding; some 10 per cent will be sold on the Ukrainian stock exchange, while 16.5 per cent will be auctioned to foreign investors. Another 11.3 per cent will be offered to private Ukrainian investors. The remaining 38 per cent of the company's shares will be held by a management collective. The privatisation -- which will be the first in steel in Ukraine -- is scheduled to take place in September 1996.

Foreign co-operation

In March 1996, a Japanese steel industry delegation was scheduled to meet with Ukrainian officials to exchange views on a range of issues. The seven-person mission was being sponsored by Japan's Foreign Affairs Ministry, with the support of the Keidanren business association. Officials from the Japan Iron and Steel Federation, Nippon Steel, NKK, Sumitomo Metal Industries Limited, the Keidanren, and the Long-Term Credit Bank of Japan were to participate in the mission.

ASIA

China

Raw materials

Under the terms of its 1992 purchase of Peru's previously state-owned iron ore property (Hierro Peru), Shougang Steel Corporation, one of China's largest steel producers, agreed to invest \$150 million in the mine over three years. In furtherance of this, Shougang is expected to issue a tender in June or July for a \$100 million, three million tonne-per-year pellet plant. Construction of a coal-fired power plant is

also being explored; Shougang would ship Chinese coal to Peru (on its own vessels), and return with ore cargoes.

A pilot monitoring programme applicable to raw materials is reportedly to be further tested before being formally introduced in July 1996. The programme is designed to prevent smuggling and tax evasion, while stimulating foreign trade. Under the programme, a trading firm that processes imported raw materials for export would be required to open a security account with the Bank of China. In 1995, Chinese customs officials found that more than 250 000 tonnes of iron ore (as well as other products) were either smuggled into the country or imported for resale locally, without authorisation.

A provisional regulation affecting scrap imports has been established in China. With the exception of scrap steel, all scrap is to be examined by local authorities prior to obtaining import approval from the National Environmental Protection Agency (NEPA). Scrap steel will be subject to direct NEPA examination.

Privatisation

While foreign investment and joint ventures have been welcomed in China, privatisation of state-owned enterprises appears unlikely in the near term. Reform of the state-owned enterprises, many of which are loss-making, would continue to be carried out in a phased manner. These principles have been endorsed in a number of Communist Party pronouncements, and were recently underscored by Mr. Wang Zhongyu, Minister of the State Economic and Trade Commission.

Restructuring

The Metallurgical Ministry has indicated that metallurgical enterprises will be intensifying their reform and development during the current five-year plan. In steel, companies will broaden their product offerings, while improving the quality and quantity of their products. Foreign capital will be sought and more advanced equipment to control pollution will be installed. Output by the year 2000 should be no less than 110 million tonnes of crude steel, while finished steel production should exceed 96 million tonnes.

In the case of Shoudou Iron and Steel Company, a major steel producer, the share of rolled steel produced to international standards is to rise to 90 per cent by the year 2000, up from 77 per cent in 1995. Steelmaking technology is to be improved and the company's product offerings is to expand to include coated steels. With the technological improvements, productivity would increase from 121 tonnes per employee to 267 tonnes per employee (per year). In the area of environment, air quality is to be improved to meet the governmental standards set for the year 2000.

In the case of Anshan Iron and Steel, five international ship classification societies recently issued quality assurance certificates relating to the company's production of ship plate. The five societies conducted on-site inspection tests of Anshan's products, smelting and rolling equipment and techniques, product quality, and control system and professional skills. By acquiring the certificates, Anshan will be able to provide steel for building ships for export, thereby enhancing the competitiveness of Chinese-made ships. Previously, of the one million tonnes of steel used in shipbuilding in China, only 360 000 tonnes were provided by domestic mills. The certification has also apparently been noted by shipbuilders in Korea, who have reportedly been exploring imports of Chinese ship plate in recent months.

Foreign co-operation

The US specialty steel producer Allegheny Ludlum is establishing a joint-venture with Shanghai No. 10 Iron and Steel Works to produce precision stainless steel strip. The American firm, which will own 60 per cent of the joint venture, will provide technology, engineering and technical and management services to the venture. Earlier, in August 1995, an Australian group (Boulder and Overseas Resources) joined with Guangzhou Iron and Steel to build a 110 000 tonne-per-year stainless steel bar and rod plant. The foreign investors will hold 60 per cent ownership in this project as well. The market for stainless products is expected to grow significantly; Government statistics indicate that annual growth in consumption will be on the order of 8 to 10 per cent, increasing from current levels of 500 000 tonnes consumed per year. By the year 2000, annual consumption could therefore be on the order of 800 000 to 900 000 tonnes.

The Import and Export Bank of China has reportedly signed an agreement with Japan under which loans totalling 14.393 billion yen (\$133 million) will be arranged for Baoshan Iron and Steel. The loans will be used to address problems related to inadequate power supply and deficient port-handling capacity at Baoshan. The Bank will also be seeking to obtain a further 16.606 billion yen (\$153 million) loan for Baoshan.

Trade

As from 1 April 1996, China's tax exemption for imports of plant and equipment for foreign-funded joint ventures was abolished. The decision to remove the exemption reportedly reflected pressures from state-owned companies, which argued that the exemption gave foreign joint ventures an unfair competitive advantage. In announcing the change in policy, officials indicated that exceptions involving large projects would be made, subject to the approval of the State Council or cabinet. The policy was to be implemented with a certain degree of flexibility. This included a three-month grace period for applying for duty exemptions, as well as a one to two year grace period for certain foreign companies in China. Within the period, the companies would continue to benefit from reduced, or exempted tariffs and preferential tax treatment. The one-year grace period (i.e., until the end of 1996) was to apply to projects valued at less than \$30 million, while the two-year grace period would apply to projects exceeding \$30 million. Projects regarded as state or prime provincial technical renovation projects were also to benefit from exemptions during the grace period.

Tariffs on over 5 000 items were reduced on 1 April 1996, from an average 35.9 per cent to 23 per cent; the tariffs reductions were made in support of the country's efforts to join the World Trade Organisation. Preliminary information indicated that:

- hot-rolled sheet and coil duties would be cut from 9-12 per cent, to 6 per cent;
- cold-rolled sheet and coil duties would be cut from 12 per cent, to 8 per cent;
- steel tube duties would be cut from 12 per cent, to 10 per cent; and
- tinsplate duties would be cut from 15 per cent, to 10 per cent.

Although the average nominal rate was 35.9 per cent, it has been noted that exemptions and reductions have resulted in an actual effective rate of 4.9 per cent.

Other trade developments include:

- In April, the European Union imposed definitive antidumping duties on certain imports of pipe and tube products from China. The final dumping margin was 58.6 per cent.
- Chinese Taipei's National Federation of Industries has reportedly been gathering information for a dumping petition involving imports of Chinese specialty steel.
- During the January to September 1995 period, China reportedly exported 3.9 million tonnes of steel billets and rods and 4.5 million tonnes of rolled steel. Principal destinations for the rolled steel were the Republic of Korea, Japan, and Chinese Taipei. Other recipients included other Asian nations, Italy, Belgium and the United States. Ministry statements indicate that some 9 million tonnes (valued at \$5 billion) were exported for the entire year. Imports were said to have totalled 13.5 million tonnes.
- An association of 59 steel importers have agreed to measures to help balance import needs with domestic demand. The measures, which will be subject to self-surveillance as well as Government oversight, relate to import levels, prices, market trends, and contracts.
- In January 1996 it was reported that China's Ministry of Foreign Trade and Economic Co-operation would shortly be implementing regulations designed to curb export sales at undervalue. An exporter would be found to be engaged in selling at undervalue if export prices were below the CIF value. After having been warned, future offences would be penalised with a fine of up to 60 per cent of the actual export sale. Financial rewards would be given to persons alerting authorities to situations involving undervalued sales.
- As from 1 January 1996, exports of some 27 categories of mineral products will require permits. The measure is seen as providing a means to co-ordinate export prices, which could result in higher price levels.

India

Raw materials

On 23 February 1996, the Indian Government announced it would be deregulating coking coal prices; this was expected to result in price increases to the steel industry.

Trade and industry developments

Concerned with the rapid expansion of hot-strip mill capacity in the country, Indian financial institutions are urging a more cautious approach to further expansion. Current annual strip-mill capacity is some 8 million tonnes, with an additional 5 million tonnes to come on-stream in the next one to three years. Other projects being considered would, if realised, add up to 9 million tonnes more to capacity. Strip product consumption, on the other hand, is projected to rise to 7.5 million tonnes by 1997-98. Imports have played an important role, amounting to about 1 million tonnes during the 12 month period ending 31 March 1996. With tariffs expected to be lowered from 30 to 20 per cent as from 1 April 1996,

trade expansion was seen as likely. Principal import sources have included the CIS republics, Germany, and South Africa.

More generally, Indian steel industry executives expect crude steel production to rise from 20 million tonnes in 1995, to about 31 million tonnes by 2001. Substantial investment will therefore be required for this to occur. Already some 22 steel projects have been proposed, at a cost of \$9 billion. Financial institutions have already reportedly cleared proposals for 14 of the 22 plants; these 14 would raise production capability by 7 million tonnes. The Indian Government expects even greater expansion, with steel production to reach 37 million tonnes by the year 2000.

On 20 February 1996, the Indian Government discontinued the Engineering Goods Export Assistance Fund. The Fund was originally designed to compensate equipment exporters for the high cost of domestic steel. Proceeds for the Fund were raised from a Rs. 300 per tonne (\$9) tax on steel and a Rs. 113 (\$3) tax on pig iron. Compensation to exporters was paid through an International Price Reimbursement Scheme, which was abolished in 1994. The Fund was continued to clear up arrears; the tax was paid, however, only by primary producers (i.e. secondary producers did not pay the tax, which, the primary producers argued, gave them a competitive advantage).

Other industry developments include:

- In the 12 month period ending 31 March 1995, India produced about 575 000 of stainless steel. Current expansion plans could raise production to more than one million tonnes by the year 2000, at which time the country could emerge as a prominent exporter.
- The state-owned Steel Authority of India, Ltd. (SAIL) has announced its intention to increase steel production capacity from a current annual level of 10 million tonnes, to 17 million tonnes by 2001.
- The Ministry of Industry has established a committee to explore ways that steel exports could be tripled by the year 2000, to 6 million tonnes.

Foreign co-operation

The Japan Iron and Steel Exporters Association surveyed the Indian steel industry in October 1995. The report by the mission team reviewed the current market and trade situations, and the outlook. It noted that steel consumption will continue to expand rapidly, and that the country had the potential to become a major steel exporter by the year 2000. The rapid development of the Indian economy could, however, be slowed by lagging development in infrastructure (such as roads, harbours and airports). The economy has been liberalised significantly in recent years. Some of the key policy changes include those related to the abolition of:

- price controls;
- Government licensing on the entry of new entrants into the industry; and
- the Freight Equalisation Scheme (which kept transportation costs uniform throughout the country).

As regards the electric furnace sector, the report notes that there are more than 216 electric furnaces in India with crude steel capacity of 17 million tonnes per year, but actual production is only 3 to 4.5 million tonnes because many of the plants are outdated. Rising power costs and scrap shortages have reportedly led to the closure of many of the electric furnace operations.

Indonesia

Raw materials

Pursuant to the Basel Convention, Indonesia has introduced regulations affecting ferrous scrap trade. Only licensed steelworks will be allowed to import scrap, trade in which is otherwise prohibited. For each shipment to Indonesia, suppliers will have to guarantee that the material is free from hazardous waste. Apparently the quantity of scrap imports will be subject to annual limits.

Industry developments

On 19 March 1996, the Indonesian Government gave its formal approval to a joint venture between Chinese Taipei's Yieh Phui Enterprise (a member of the steelmaking Yieh Loong Group) and the Indonesian banking and insurance conglomerate Lippo Group to build a 1.6 million-tonne per year cold-rolling facility in Indonesia. The plant, in which Yieh Phui will hold a 55 per cent interest, is to be completed by 1999, at a cost of \$700 to \$800 million. Hot coil feed for the new mill could come from a number of sources, including a new hot strip mill that Krakatau Steel may be building with the Korean firm Posco. Arrangements for the hot-strip mill are still being finalised, with a joint venture targeted to be formed in May 1996. As currently structured, Posco and Krakatau would each hold 40 per cent ownership in the plant. The cost of the 1 million tonne per year project has been estimated at \$503 million. Construction would be completed by 1999.

State-owned Krakatau is to be partially privatised this year, when the Government lists it on the country's stock exchange. In the past 18 months, the Government has successfully listed two state-owned telecommunications companies and a tin operation. October has been mentioned as a target listing date for the steel firm. With regard to the company's future, an official of the company's strategic planning team has indicated that the company's capacity should grow to not less than 16.5 million tonnes per year by the year 2020. This development will be achieved in successive stages, as follows: optimisation of existing facilities during 1996-98, with annual capacity to rise from 2.5 to 3.5 million tonnes; construction of a second generation 4 million-tonne-per-year steel mill during 1997 to 2005, to be followed by a 6 million-tonne-per-year facility during 2006 to 2015 and a 3 million-tonne-per-year facility during 2017 to 2020. The company is also making efforts to improve the quality of its products: quality systems have been certified to conform with ISO standards since 1993, and Japan has also granted certain certification for Krakatau's products.

Trade

Low-priced imports from eastern Europe have caused concern at Krakatau Steel. In March 1996, the President of the company indicated that imports of hot coil priced at \$280 per tonne were significantly lower than Krakatau's \$300 per tonne cost. The Indonesian Government was reportedly

reviewing its custom's laws and regulations with a view towards moderating the inflow of the inexpensive steel.

Malaysia

Industry conditions

The Malaysian Government has approved a M\$600 million (\$239 million) loan to state-owned, financially troubled Perwaja Steel to help finance the expansion of the company's rolling mill at Gurun, Kedah. The loan is being provided by the Employees Provident Fund, at an interest rate of 9 per cent. With the assistance of the Government and domestic financial institutions, the company is to pay a lump sum of 45 billion yen (\$414 million) to retire a loan to the Export-Import Bank of Japan; in 1995, the Bank had extended the loan until 2004.

The Gunawan Iron and Steel company is expected to begin production at Malaysia's first blast-furnace steel operation in May 1996. In its initial stage, the facility will produce steel plate from imported slab. Once the steelmaking furnaces are installed, the product range will be expanded to include semifinished steel slabs. Since Gunawan is a foreign company (i.e. Indonesian) it is permitted to sell a maximum of 20 per cent of its final production in Malaysia. The balance will have to be exported.

After several years delay, Malaysia's Lion Group has received Government approval for a 1.9 billion ringgit (\$757 million), 2 million-tonne-per year hot-strip strip mill. The project has been granted *pioneer* status, which confers certain tax advantages. Lion and its steelmaking division Amsteel have taken 20 and 50 per cent interests in the project, respectively, with the remaining 30 per cent of the mill to be held by local investors.

Singapore

Singapore has imposed antidumping duties on imports of steel reinforcing bar from two Turkish firms. As reported earlier, similar duties have already been imposed on imports from Malaysia.

Chinese Taipei

The Chairman of China Steel Corporation is cautioning steelmakers in Chinese Taipei to proceed cautiously with expansion plans. If all current expansion plans were realised, he noted, Chinese Taipei would have a 10 million tonne steel surplus by the year 2000 (at which time production could total up to 52 million tonnes). Per capita steel consumption has grown to relatively high levels, but, he noted, there was a decline in 1994. As indicated under the report on China, the Chinese National Federation of Industries is reportedly gathering information to be used in a dumping case involving imports of certain specialty steel from China.

Thailand

Industry conditions

On 30 October 1995, partners in Siam United Steel formally committed themselves to the construction of a 1-million tonne per year, \$697 million cold-rolling mill. Partners in the project include a number of foreign steelmakers, including Nippon Steel, which has a 24 per cent holding, Kawasaki (7 per cent), Posco (3 per cent) Sumitomo Metal Industries (2.5 per cent), Mitsui (2.5 per cent) and Mitsubishi Corporation (1 per cent). Almost all of the new mill's output is expected to be sold domestically. Proceeding with the project required Government approval, which, in turn, required the steelmakers to demonstrate to the Government authorities that the market could support two cold-rolled mills. The other competitor is Sahaviriya Steel, which is awaiting Government approval to expand its cold-rolling facility from 670 000 tonnes to 1 million tonnes per year. At the request of Siam, the Thai Government was reportedly considering the import tariff situation on hot and cold rolled products and has agreed in principle that there should be parity between the two (hot-rolled tariffs are currently higher).

In March 1996, several companies were finalising new investment projects in steel. These included: a \$500-million hot strip mill to be built by Siam Steel with loans from 16 Thai and Japanese banks; a \$132 million investment by Bangkok Steel in long and flat product projects; and a \$20 million joint venture between Chao Phraya Finance and Securities and a number of Japanese investors, in long products. Earlier, in February, contracts were being awarded by a consortium of companies for the construction of a \$650 to \$750 million integrated steelmaking facility, Thailand's first integrated works. The plant will have the capacity to produce 2.75 million tonnes of liquid steel, and 2.15 million tonnes of semifinished steel billets. The plant, which will ultimately represent a \$1 billion investment, will be financed in part through low-cost export financing provided by Trafalgar House of the United Kingdom (the engineering and equipment firm selected, of which Davy International is a part), and a consortium of Thai banks.

Trade

In trade, recent developments include:

- In April, the EU accepted commitments from Thai producers to take actions to prevent European steel producers from being injured by dumped pipe and tube imports. As a result, final antidumping duties will not be applied (to those producers which made commitments).
- Thailand's hot coil producer Sahaviriya Steel Industries has expressed concern over imports of low-priced steel. The imports were reportedly partly responsible for the company's poor financial results during 1995.

Vietnam

Raw materials

The Vietnamese Government has enacted a law that will permit foreign companies to mine the country's natural resources. The law, which comes into force on 1 September 1996, provides mining

companies with the possibility to conclude contracts that could last up to 50 years. According to the World Bank, Vietnam has abundant mineral resources, including 1 billion tonnes of iron ore reserves with an ore content averaging 60 per cent.

Industry conditions

The start-up of four new joint venture steel works over the past year has raised concerns of possible overcapacity at Vietnam Steel Corporation (VSC), the state-controlled steel holding company. The four new plants, which were built with the participation of Kyoei Steel (Japan), Posco (Korea), Natsteel (Singapore) and VN Industrial (Australia), will add an estimated 740 000 tonnes to Vietnam's long products annual rolling capacity in 1996. In light of this expansion, VSC has announced it will abandon plans to build an additional bar and rod mill, at least for the time being, and instead invest in billet capacity.

Steel consumption in Vietnam continues to grow rapidly. In 1995, consumption totalled some 1 million tonnes, of which 80 to 90 per cent was for steel to be used in construction. An increase of 20 per cent is expected for 1996, with annual increases of 16 to 20 per cent to occur until the year 2000. The domestic long product producers have urged the Government to end the duty-free treatment that has been given to steel imported for construction projects, a measure that was intended to facilitate foreign investment in the country. Normal duties are apparently on the order of 30 per cent, plus an additional 10 per cent import fee.

Foreign co-operation

One of the joint ventures that has been formed has brought shareholders from Australia, Malaysia and Vietnam together in a 180 000 tonne per year project to produce steel reinforcing bar. The project, which began operation in the latter part of 1995 under the name Vinausteel, is under the Government's *build-operate-transfer* scheme, which will result in the firm being transferred to Vietnam parties after 30 years, without any compensation (although there is a provision to extend the 30 year period). In the meantime, mill sales will be subject to a 2 per cent turnover tax, with profits to be tax-free for two years. Tax rates will then rise from 7.5 per cent in years three to six, to 15 per cent from years seven to ten, and to 25 per cent from year 11 onward. Financing for the project has been provided by Vietnam Industrial Investment, which has offered loans of \$4 million for the Vietnamese partners to become shareholders. Between the 11th and 20th year of operation, the Vietnamese partners will be entitled to increase their equity to 45 per cent.

In November 1995, the Korean firm Daewoo announced it was negotiating a joint venture with Vietnam Steel Corporation for the construction of a 1 to 2 million tonne per year steel works in Vietnam. Investment would be on the order of 1 trillion won (\$1.3 billion).

LATIN AMERICA

Brazil

Industry conditions

Brazilian steelmakers are reportedly reviewing and revising their investment plans in light of weakness in the domestic market. Planned investments of \$7.7 billion -- targeted to improve efficiency and product quality while increasing capacity from 28 to 32.7 million tonnes of steel per year -- were expected through the year 2000. Of the \$7.7 billion, some \$3.1 billion is apparently still subject to feasibility studies. Rising costs associated with the 1994 introduction of the new currency (the Real), combined with rising energy and port costs have also apparently diminished the prospective returns on investment in the industry. Competition from imports has also been increasing, as evidenced by their 48 per cent rise in 1995 (to 300 219 tonnes). A further increase in 1996 is expected. Exports, which declined by 10.4 per cent in 1995, are expected to grow by about 7 per cent this year.

The Brazilian Government has released \$350 million in financing to CSN, the country's largest mill. The funding, which totals \$1 billion, was being provided principally by Brazil's National Development Bank, with the participation of the World Bank; a portion of the funds are to be used for environmental upgrades.

Trade

Brazil was reportedly going to request a waiver from the World Trade Organisation to enable the country to maintain a fiscal incentive that reduces tariffs on merchandise used to produce automobiles. In the case of steel for auto production, tariffs averaging 12 per cent would be reduced to 2 per cent, retroactive to 1 January 1996. The measure providing the incentive was enacted by Brazil in December 1995, and is to be effective until 31 December 1999, during which time the tariffs would be gradually increased back to their original levels. The legislation specifies that car producers must request permission to import the steel, that such steel must not account for more than 50 per cent of the steel used by the carmakers, and that the annual cost of all imported merchandise used in auto production must not exceed the annual value of car exports. Reports indicate that the European Union, Japan and Korea were intending to contest the waiver.

Peru

A consortium led by an affiliate of US-based GS Industries purchased previously state-owned Sidperu in February 1996. The sale was to be completed in March, when the GS affiliate, Acero, was to pay \$80 million in cash for the facility, while assuming debts of at least \$26 million. Some \$50 million is expected to be invested in the facility over the next ten years.

Venezuela

Venezuela's largest steelworks, Sidor, is set to be privatised by the end of 1996. The company, which produced 2.7 million tonnes of crude steel in 1995, will be sold in three parts -- the long products

plant, the flat products plant, and the tube facilities. International tenders were expected to be sought as from August.

AFRICA AND THE MIDDLE EAST

Zimbabwe

The search for an equity partner that could help carry out an investment programme that would assure the survival of state-owned Ziscosteel continues. Funding from the International Finance Corporation is available to help finance modernisation, provided the company develops an acceptable business plan. During 1995, the troubled steelmaker produced at less than 30 per cent of its production capability.

**DEVELOPMENTS IN NON-MEMBER ECONOMIES
(APRIL 1996 - SEPTEMBER 1996)**

BY

**MR. PETER AVERY
PRINCIPAL ADMINISTRATOR, OECD SECRETARIAT**

The following report on developments in non-Member economies generally covers the period April 1996-September 1996. It should be borne in mind that it has not been possible to verify that the information presented provides an accurate account of the situation described in the countries and areas reviewed. Most of the report is based on information appearing in the press and from other information sources.

Please note that when monetary sums have been converted into US dollars, the conversions have been made on the basis of the currency exchange rates prevailing on 23 September 1996.

MAIN POINTS

The attached report on developments in steel in non-Member economies indicates that the situation in steel trade has become somewhat uneasy in various parts of the world. Latin American producers, for example, have issued a joint statement through the regional steel association ILAFA calling for governments to take action against growing imports from the new independent states of the former Soviet Union (NIS). Concern with NIS imports has also been growing in the Asia-Pacific area, where a softening of the market has resulted in declining prices. In this region, however, concerns over imports are not restricted to NIS economies.

A review of the situation in the Asia-Pacific area indicates that industries and governments are responding to emerging trade problems in different ways. In the case of Singapore, Thailand and Vietnam, formal actions have been taken to address import problems through antidumping measures (in the case of Singapore), import surcharges (Thailand), or import bans (Vietnam). Concerns about imports have also been raised by the steel industries in India, Indonesia, Malaysia, the Philippines and Chinese Taipei, but, with the exception of Chinese Taipei (where an antidumping investigation is underway), no formal actions appear to have been taken. In China, as previously reported, the Government is overseeing measures that have been taken by importers to help balance import needs with domestic demand, with a view towards avoiding excessive imports. The measures include self-surveillance (by importers) of steel import levels and prices.

The attached report also contains information on the development plans and prospects for the industry in a number of countries, including:

- China, where investment in the industry is slowing and increased attention is being placed on improving product quality, and on improving the industry's environmental performance;
- India, where investment in steel facilities continues, in anticipation of an average annual growth in domestic steel consumption of 14 per cent through the year 2001;
- Malaysia, where steel consumption is expected to more than double, rising from 7 million tonnes in 1995 to 20 million tonnes by the year 2005;
- Philippines, where a master plan for the steel industry is being formulated;
- Thailand, where development plans for the industry appear to be slowing; and
- Vietnam, where the government's master plan for the industry indicates that the country will need to produce 10 million tonnes of steel per year by the year 2005, compared to about 518 000 tonnes in 1996.

The report also contains information on recent steel industry privatisation developments in Malaysia, the Philippines, Sri Lanka, the former Yugoslav Republic of Macedonia, Romania, Paraguay and Venezuela.

ASIA-PACIFIC AREA

China

Raw materials -- Iron ore

UEC, an engineering and consulting unit of the American firm USX, is exploring the development of a \$200 million iron ore project with Kunming Iron and Steel, in China. UEC's role would reportedly be advisory (i.e. it would not be taking an equity share in the project).

Shougang Iron and Steel's investment in a Peruvian ore property has reportedly been modified. An addendum was signed with the Peruvian privatisation commission under which Shougang is to invest an additional \$200 million in the Hierro Perú property by the year 2000. Shougang had failed to invest the \$150 million provided for in the initial agreement, spending instead about \$43 million.

Longer term, Chinese imports of iron ore are expected to rise to some 70 million tonnes per year by the year 2000. About 50 per cent of the import total is expected to be sourced in Australia, with much of the balance to be imported from foreign mines in which Chinese parties hold equity.

Industry conditions

As of late September, Chinese sources expected crude steel production to be on the order of 100 million tonnes in 1996, up from 93.6 million tonnes in 1995 (Table 1). The quantity of finished steel products would be about 82 million tonnes. Despite increasing steel production, the industry continues to experience difficulties due to the Government measures taken to lower inflation. These measures had a pronounced effect on public works projects, many of which were deferred, and, more generally, on

construction. With inflation now lower, interest rates have been reduced by two percentage points during the year, with a view towards stimulating specific sectors, like steel. Overall, state-owned enterprises experienced losses of about 35 billion yuan (\$4.2 billion) during the first half of 1996. This was the first time in recent history that a loss had occurred. Analysts have questioned the extent to which the reduction in rates will improve the situation. It was seen as having relatively little impact on firms like Shougang Iron & Steel, which have sizeable debt burdens. Solutions to their problems were seen as requiring basic, long-term changes in their corporate structures and ways of doing business.

Steel prices were declining by several percentage points per month in mid-year, falling to an average 3 129 yuan (\$375) per tonne in July. At that time, experts expected the situation to be stable for the balance of the year. The price decline resulted in a deterioration in the industry's financial performance during the first half of the year. Statistics from the Ministry of Metallurgical Industry indicate that, despite increased production, the combined sales and income of 106 iron and steel enterprises fell by 6 and 31.8 per cent during the January to May 1996 period (compared to results during the similar period in 1995), respectively; loss-making enterprises had offset 67 per cent of the profits from profit-making companies.

A report on Baoshan Steel, which is China's largest industrial enterprise, with assets of 59.8 billion yuan (\$7.2 billion), indicates that the firm's exports and imports are 30 times higher than a decade ago, totalling \$1.5 billion. While production has increased during the ten years, employment at the firm has fallen, from 40 000 when the company began operations a decade ago, to 13 000 currently. The company's products have been exported to 25 countries and regions. In 1995, Baoshan produced 8.51 million tonnes of crude steel while exporting 1.65 million tonnes of steel products. The company's sales and pre-tax profits totalled 25.38 billion and 6.01 billion yuan (\$3.0 and \$0.72 billion), a return on sales of some 24 per cent. In the field of investment, the Industrial and Commercial Bank of China is helping to finance the company's activities. The Bank, which is giving support to certain state-owned enterprises, recently provided a loan to Baoshan totalling 1.2 billion yuan (\$144 million). In addition, under a three-year co-operative agreement, the Bank has offered the company a 1 billion yuan (\$120 million) loan to augment working capital and a 200 million yuan (\$24 million) loan to acquire fixed assets.

Table 1. Chinese crude steel production, by company, 1994, and 1995

Company	1994	1995	
	Production	Production	Share of total
	(million tonnes)		(%)
Baoshan	7.27	8.51	9.1
Anshan	8.16	8.13	8.7
Shougang	8.24	8.00	8.5
Wuhan	5.29	5.41	5.8
Baoutou	3.04	3.30	3.5
Benxi	2.51	2.64	2.8
Panzhuhua	2.35	2.58	2.8
Maanshan	2.42	2.57	2.7
Taiyuan	2.30	2.28	2.4
Nundan	2.02	2.10	2.2
Tangshan	2.06	2.08	2.2
Other	46.96	46.00	49.3
Total	92.62	93.60	100.0

Source: *Metal Bulletin*, 19 February 1996, page 21, and news reports from China.

A report on Anshan Iron & Steel, which is China's second largest enterprise in terms of assets (45.1 billion yuan [\$5.4 billion]), indicates that the company is scaling back production goals for the year 2000 by 1.2 million tonnes per year, to 8.8 million tonnes. The five-year plan approved by the Government for the company foresees 21 billion yuan (\$2.5 billion) in capital expenditures. The expenditures would be used to upgrade technology (with continuous casting to rise from 27 to 72 per cent) and develop more than 100 kinds of new steel products. When fully implemented, some 60 per cent of the company's equipment would meet advanced international standards. The company plans to restructure its finances by reducing borrowing to 20 per cent of capital expenditures. At the end of 1995, the company had debts of 13.3 billion yuan (\$1.6 billion), which translates into a debt to asset ratio of 0.67. In the future, greater emphasis is to be placed on internally generated funds, with accelerated depreciation to account for 11.8 billion yuan in investment funds (or 56 per cent of total investment). An additional 6 billion yuan will be sourced through joint ventures. Employment at the company, which produced 8.1 million tonnes of crude steel in 1995, totals 520 000.

A report on Shougang Iron and Steel, China's third largest producer, indicates that the company faced a grim situation in early 1995. With high inventories and an acute shortage of funds, the company was unable to pay its debts, including taxes owed to the state. Significant market-oriented changes have since been made in the company's operations, however, resulting in improved performance. Under a previous "profit-increasing contract system", the company had had an incentive to maximise output without regard to market conditions, which resulted in overproduction and shortages of funds. When the system was terminated in 1995, priorities shifted. More attention is now being paid to reducing inventories and matching investment more closely to income. Reflecting this, Shougang has suspended or postponed 10 major projects, reducing investment in fixed assets by some 10.7 billion yuan (\$1.3 billion). At the same time, remaining investment funds are being concentrated on completing projects needed to improve the environmental performance of the company. In increasing efforts to promote sales, greater emphasis has been placed on exports, which rose by 27.8 per cent in 1995, to 767 000 tonnes (which was equal to 11.5 per cent of rolled steel production). While sales revenue grew slightly, falling prices resulted in declining profits, which fell by 14 per cent, to 4.5 billion yuan (\$540 million); this represented a 20 per cent return on sales.

Longer term, rising steel production is expected to raise China's self-sufficiency in key products areas. According to the Minister of Metallurgy, China's steel industry should supply 95 per cent of domestic demand for rolled steel products by the year 2000. This would include 80 per cent of the sheet steel used in automobile production and 70 per cent of oil pipes and stainless steel products.

Environment

Shougang Iron and Steel has reportedly become the target of an aggressive anti-pollution campaign. The steelworks, which are located in the suburbs of Beijing, was recently cited as responsible for half of the city's sulphur dioxide emissions and three-quarters of the carbon-monoxide emissions. Efforts are being made to have company reduce these emissions.

Foreign co-operation and investment

German plant-maker SMS is to supply three thin slab plants to China under a contract signed on 30 May with the China International Iron & Steel Investment Corporation. The three plants will have a combined capacity of 4 million tonnes of steel per year. The three plants, which represent a 750 million DM (\$497 million) investment, will be installed at the Zhujiang Iron & Steel works in Guangdong,

Bautou Iron and Steel in Inner Mongolia and the Handan Iron & Steel works in the Hebei province. Two of the companies -- Bautou and Handan -- are existing integrated steelmakers, while Zhujiang is a new enterprise. The plants would come on stream successively, in 1997, 1998 and 1999. According to an official from the China Iron & Steel Industry and Trade Group, which was established in 1993, raw materials for the electric-furnace facilities will be supplied from newly constructed plants producing directly reduced iron (DRI), and imports of scrap, DRI and hot iron briquettes (HBI).

Baoshan Iron & Steel has finalised an agreement with Nisshin Steel and two Japanese trading companies to form a new stainless steel venture. Phase one will include a \$150 million cold-rolling plant with an annual capacity of 80 000 tonnes per year, for completion in September 1998. Some 66 per cent of the project will be owned by Baoshan and the city government in Ningbo, where it is being built. Baoshan has also awarded a \$120 million contract to three Japanese firms to supply boilers and turbine generators for Baoshan's new electric power plant. The equipment is reportedly being financed using Japanese Government loans.

As of mid-1996 a German consortium of steelmakers was finalising a \$1.35 billion joint venture with China's Pudong Steel Group to construct a 440 000 tonne per year stainless steel plant, in which the German companies would hold a 60 per cent share. Construction of the project was to begin in July 1997, with completion to occur in 2004. China's State Council had approved the project in March 1996, and was expected to give final authorisation in June (1996). The joint venture was expected to improve the competitiveness of Pudong, which, a company official said, was using technology dating from the 1950s. The company has reportedly been coming under pressure due to China's tight credit policies and rising competition from imports.

Trade

The Chinese Ministry of Foreign Trade has reportedly adopted a number of measures to discourage the under-pricing of exports (in general). Prices, it has advised, should reflect production and transportation costs, insurance and administrative fees, as well as a reasonable profit. Non-compliance would result in the issuance of a warning, which, if unheeded, would subject producers to a fine equal to 60 per cent of the under-priced exports. Failure to pay any fines within 30 days would result in the suspension of the company's permit to trade.

Net imports of steel have increased sharply in China during 1996. The increase reflects rising imports and slowing exports. During January-July, imports rose by 24.3 per cent from the comparable period in 1995, to 9.14 million tonnes. The increase in imports was most pronounced in "plates", a term that appears to include most flat-rolled products. These imports increased by 63.5 per cent, to 6.02 million tonnes. Imports of steel bars and structural shapes, on the other hand, fell by 5 and by 47 per cent, respectively. Steel exports fell by some 37.5 per cent during the first seven months, to 2.17 million tonnes. The largest decline occurred in exports of "plates", which fell by some 54.3 per cent, to 1.07 million tonnes. Analysts have questioned whether it will be possible to hold imports to the targeted level of 10 million tonnes in 1996, in light of lower stocks and rising demand.

In the field of imports, the Chinese Government abolished a system of preferential treatment for steel imported into special economic zones, as from 1 April 1996. The preferential treatment was withdrawn to curb abuses; steel had reportedly been brought into the country from the economic zones, without authorisation.

As to trade patterns, Japan was the leading source of Chinese imports of steel and related products (i.e. including pig iron and ferroalloys) during 1995, accounting for 36.6 per cent of the 14.8 million tonnes of imports. An additional 33.7 per cent of the imports originated in Eastern Europe and the former Soviet Union, with Russia alone accounting for 22.5 per cent of the import total. Principal export markets for Chinese steel and related products in 1995 included Japan (26.5 per cent of the 17.9 million tonne total), the Republic of Korea (22.5 per cent), and Chinese Taipei (10.5 per cent).

India

Industry conditions

The two largest Indian steel producers, the Steel Authority of India Ltd (SAIL) and Tata Iron and Steel Company Ltd (Tisco), both had successful years for the twelve-month period ending March 31, 1996. SAIL recorded profits as a result of higher production, better product mix and improved efficiency. For the tenth consecutive year, the state-owned company did not receive any budgetary support from the Government. In the case of Tisco, gross profit before depreciation rose by 46 per cent, to 11.4 billion rupees (\$319 million). The company continued to export 15 per cent of its production, and increased its efforts to earn foreign currency through such sales.

Profitability in the industry is expected to be sharply lower during the current fiscal year (which ends in February 1997). Industry sources attribute the expected decline to:

- the rising costs of energy, freight and imported technology;
- sluggish demand for steel in almost all sectors;
- lower export demand; and
- the dumping of steel from the CIS area.

In the case of energy, electricity prices have risen by 15 to 43 per cent in one region in which there is a high concentration of electric furnace steelmakers. The combined effect of increased freight and energy costs on steel produced in electric furnaces has been estimated at 1 600 to 1 900 rupees (\$45 to \$53) per tonne. Power costs, one producer noted, are currently three times those prevailing in other countries. Reflecting the growing difficulties in this segment of the industry, more than 90 electric furnace units have been closed during the past four years. Approximately 90 units, with a combined capacity of about 6 million tonnes of annual steelmaking capacity, remain.

The outlook for steel was recently examined by a number of Indian groups. A Government-constituted task force estimated demand for Indian steel at 32.68 million tonnes by 2000-2001, which implies an average annual growth rate of 14 per cent. The 2000-2001 estimate is slightly higher than 30 and 31 million tonne projections made by SAIL and the Government's Economic Research Unit, respectively. In the field of trade, the task force estimates that some 6 million tonnes of steel would be exported by 2000-2001, with an increase to 9 million tonnes possible by 2006-2007.

Investment

Some 70 per cent of SAIL's 160 billion rupee (\$4.5 billion) investment programme is to come from its shareholders' funds during the Ninth Plan, which covers the five-year period from March 1997 to February 2002. These funds, which comprise equity capital and reserves (such as retained earnings), have grown from 33.12 billion rupees (\$928 million) to 79.37 billion rupees (\$2.2 billion) during the past decade. Under the planned financing scheme, the debt to equity ratio would fall from 1.8, to 1.2. Steelmaking capacity would increase from 10 million to 17 million tonnes.

Tisco's 30 billion rupee (\$840 million) modernisation programme for its Jamshedpur works is to be financed from a number of sources, including internally generated funds (27 to 30 per cent), foreign currency loans/external commercial borrowings (23 per cent), and a loan from the Steel Development Fund (15 per cent). Overall, the company expects to invest 15 billion rupees (\$420 million) per year in steel for at least the next seven years. During this period, the company would try to maintain a debt-to-equity ratio of around 0.80.

In the case of the steel group Mesco, the financial situation has changed in recent months, leading to a delay in the company's 30 billion rupee (\$840 million) flat products project. A consortium led by the Industrial Bank of India has reduced a proposed loan of 15 billion rupees (\$420 million) to 5 billion (\$140 million), which was followed at a later date by a downgrading of the company's fixed deposit programme. Questions have now been raised as to how the group will raise the capital required for its expansion programme.

The financing of Nippon Denro Ispat's 45.7 billion rupee (\$1.28 billion) hot strip mill expansion will include 13.0 billion rupees (\$364 million) in the form of equity finance and loans from 25 domestic and foreign financial institutions and banks. Once the equity is raised, the company expects its debt to equity ratio to be on the order of 3. The foreign financial institutions participating in the project include the International Finance Corporation (IFC) and KFW of Germany. Participating Indian institutions include the International Finance Corporation of India, the Industrial Development Bank of India, the Industrial Credit and Investment Corporation of India, and others. All major commercial banks in the country are providing loans. As regards IFC finance, in 1994 the agency approved loans totalling \$90 million and authority to invest up to \$6 million in equity. In mid-1996, the agency was proposing additional financing in the form of loans totalling \$45 million, plus additional equity of \$6 million.

The Jindal Group's construction of a 33 billion rupee (\$924 million), 1.6 million-tonne per year hot strip mill facility is being financed from a variety of sources. Up to the second stage of the three-stage project, some 17.7 per cent will be financed by the Group, some 33 per cent from public issues, some 22 per cent through suppliers credits, and 27.3 per cent from loans. Some 36 per cent of the total project is ultimately expected to have been financed from equity sources. Jindal expects to export about 25 per cent of the facility's output.

A recent report suggests that new steelmaking facilities are exempt from a 4 per cent Indian sales tax.

Foreign co-operation

The French firm Ugine is reportedly studying a joint venture with the Indian firm Jindal, which would result in the construction of a 350,000 tonne-per-year stainless steel mill; both firms would hold a

50 per cent interest in the project. The first phase of the project, which has been approved by the Indian Government, would commence in the year 2000.

Other joint ventures involving foreign partners include the following:

- The Swedish company Sandvik is forming a joint venture with an Indian firm to produce seamless tubes. Sandvik would hold some 51 per cent of the 7 000 tonne-per-year facility's equity.
- The American steelmaker Inland Steel Industries, Inc., is forming a joint venture service centre with India's Tisco. Each party is to hold a 50 per cent share in the company. There are currently relatively few service centres in India that provide processing and value-added services for end-users.
- The Japanese firm Nippon Steel Corporation has reportedly agreed to provide technical assistance to Tisco. The assistance is related to Tisco's construction of a cold-rolled steel facility.

Trade

In September, the Indian Finance Minister proposed an increase in customs duties on imports of stainless semifinished products, excluding slabs, from 20 to 30 per cent. In July, duties on semifinished stainless steel had been reduced from 40 to 20 per cent, while duties on hot-rolled coil were reduced from 30 to 25 per cent, and duties on cold-rolled coil, from 40 to 30 per cent. At the same time, the Minister announced a reduction in stainless scrap import duties, from 20 to 10 per cent. It is not clear from reports whether these measures have been implemented.

A September report indicates that domestic steelmakers are becoming increasingly concerned about low-priced imports. According to the report, the country's leading steel producers were collecting information which would allege that hot-rolled coils from Europe and the CIS were being dumped in the Indian market at prices ranging from \$265 to \$285 per tonne. The possibility of addressing import problems through a "trigger price mechanism" was also reportedly being explored by companies. Under such a mechanism, a regulatory duty would be applied to imports when prices fell below certain prescribed levels.

Indonesia

State-owned Krakatau Steel has entered into an agreement with the Korean firm Posco to establish a joint venture, 1-million-tonne-per year hot strip mill in Indonesia. Both parties are to take 40 per cent ownership shares in the project, with the balance to be owned by other parties. The project is to be expanded to a 2 million-tonne-per-year facility by 1999 or 2000, with 20 per cent of the output to be exported, mostly to South East Asian countries. Krakatau has also entered into an agreement with the German firm Krupp for the construction of a 100 000 tonne-per year mill to produce cold-rolled stainless steel.

Malaysia

Industry conditions

The financially troubled state-owned Perwaja steel company has been partially sold, with Maju Holdings taking a 51 per cent share. The Government has been trying to sell a 30 per cent share (retaining a 19 per cent share, plus a golden share, for itself), but efforts have thus far failed. The Government has called for a rescue plan to be put together for the company within six months time.

Progress has been made with the Lion Group's 1.9 billion ringgit (\$760 million) project to construct a flat-products facility in Malaysia. The Government would hold a 30 per cent share in the plant, which would initially have the capacity to produce 2 million tonnes of hot-rolled flat products per year. Paid up capital would total 600 million ringgits (\$240 million), with the Lion Group to finance its share via internally-generated funds and bank loans. In the meantime, the Lion Group is already exploring the construction of a second 2-million-tonne-per-year hot strip mill. Separately, the Malaysian Government has commissioned the Japanese steelmaker Kawasaki Steel to conduct a feasibility study for a 3 million-tonne-per-year hot strip mill. Government approval is apparently required for steel projects. In 1995, some 24 projects to manufacture basic iron and steel products were so-approved.

Trade

In the field of trade, Malaysian steel producers have recently indicated their concern over low-priced imports of cold-rolled coil. The Government was reportedly considering the imposition of antidumping duties.

Industry outlook

The Malaysian Iron & Steel Federation has completed an analysis which concludes that apparent steel consumption would rise from the 1995 level of 6.98 million tonnes, to 19.81 million tonnes by the year 2005. During the period, the share of flat products in total consumption would rise from 47 to 60 per cent. In its report, the Federation suggested ways to address a number of issues, including those related to the cost and availability of scrap and complementary metallics, a shortage of skilled labour, the rising costs of infrastructure and services, the cyclical nature of the industry and the increased competitiveness that will be required as South East Asia liberalises trade.

Philippines

Industry conditions

In mid-1996, the Philippine Government was in the process of selecting a foreign firm to formulate a master plan for the development of the country's steel industry. Development of the industry is reportedly one of the President's principal priorities. The plan was expected to be completed by year's-end. It would serve as a blueprint for the industry, which would not only orient its export strategies, but also determine the solution to industry problems, such as the lack of integrated crude-steelmaking facilities.

In support of industry development, the Government finalised guidelines for the grant of incentives to those iron and steel companies seeking to modernise or expand capacity. Under the programme, the Government's Board of Investments (BOI) grants incentives to iron and steel firms investing in new technology that will improve productivity or manufacturing efficiency. Qualified for incentives are modernisation projects in steelmaking, steel casting, rolling, galvanising and colour coating, pipe and tube-making, cold milling and hot milling. Unlike other BOI programmes, the modernisation programme provides additional benefits to iron and steel firms located within the metropolitan Manila area. Most existing firms are located in this area. Steel producers have expressed concern about the Government's plan to include steel in the list of investment priorities for 1997; they reportedly fear that placing priority on steel could result in overcapacity.

Foreign co-operation and investment

The Malaysian holding company Wiek Tiek Holdings, Bhd., together with its Japanese partner Marubeni Corp., completed the purchase of a 75 per cent interest in previously state-owned National Steel Corporation in September 1996. Under the terms of the purchase, Wing Tiek pledged to provide 2.3 billion pesos (\$88 million) to the company by 31 October 1996. The Government was planning to sell its remaining 25 per cent share in the company in two separate auctions. The first 20 per cent was to be auctioned to institutional investors in four blocks of 5 per cent on 2 October 1996, with the balance to be offered to small, local investors late this year or early next year. There were, however, no offers tendered on the second.

Trade

Philippine import duties are to be reduced over the next several years, consistent with ASEAN commitments and goals. Under executive order (EO) 470, duties had been set at 10, 20 and 30 per cent for raw, intermediate and finished products. Under EO 264, which took effect in August 1995, a four-tiered structure was established. A 3 per cent tariff would be applied to raw materials and capital equipment not produced locally, a 10 per cent tariff to those produced locally, 20 per cent to intermediate goods, and 30 per cent to finished goods. The different rates are to be phased down to a uniform rate of 5 per cent by the year 2003. Wire rod producers have taken exception to proposed reductions in tariffs on their products, and have requested the Government to revert to tariffs of 20 per cent in 1997 and 10 per cent in 1998, instead of reducing the tariff levels to 3 per cent.

Foreign co-operation and investment

The Italian equipment-maker Danieli has entered into an agreement with the F. Jacinto Group to be the main contractor for a 1.2 million-tonne-per-year thin slab casting plant. Danieli will hold an interest of up to 30 per cent of the project, together with another partner. Jacinto will also take a 30 per cent interest, with the balance of ownership to be sold to Philippine and foreign investors. Philippine banks are to be providing the necessary funds for the loan portion of the project.

The Philippine's three major steel producers -- National Steel Corporation, Jacinto Steel and Bacnotan Steel of the Phinma Group -- are each studying the feasibility of constructing integrated steel mills costing between \$1.5 to \$2.0 billion (each).

Singapore

Singapore's NatSteel Ltd, is restructuring its steel operations, with a view towards enhancing its competitiveness. Following a loss of 3.1 million Singapore dollars (\$2.2 million) in the conglomerate's Singapore steel operations during the first six months of 1996, due to depressed selling prices and rising operating costs, the company reduced employment by 120 workers, and reduced the number of its steelmaking furnaces. A significant rise in profits from the company's overseas mills (notably in Thailand and Malaysia), however, enabled the steel division to break even. NatSteel, Singapore's only steelmaker, is 15.4 per cent owned by the Government investment company Temakek Holdings. In April, the company suspended a plan to build a flat-products mini-plant.

Sri Lanka

State-owned Ceylon Steel Corporation, an electric furnace facility capable of producing up to 96 000 tonnes of bar and rod products per year, is being privatised. Tenders for the company were due in August. Korea Heavy Industries and Construction was reportedly exploring the possibility of acquiring 90 per cent of the firm. Relatively high tariffs have reportedly resulted in attractive domestic prices for the firm's products. The local market for bar and rod products is estimated at 100 000 to 125 000 tonnes per year.

Chinese Taipei

In July, Tung Ho Steel Enterprise Corp. filed a dumping complaint, alleging that four companies in four countries were dumping H-beams in Chinese Taipei. The companies were located in Australia, the Republic of Korea, Poland and Russia. In September, three companies -- namely China Steel, Feng Hsin and Yieh Hsing -- were reportedly preparing a formal complaint alleging that certain steelmakers in six countries -- namely the Czech Republic, Japan, Poland, Russia, South Africa and the United Kingdom -- were dumping wire rod in Chinese Taipei at prices significantly below those prevailing in the foreign countries' home markets.

Thailand

Industry conditions

Steel has reportedly played a central role in Thailand's economic development. In 1989, after a series of feasibility studies, the Government granted investment incentives to the Sahaviriya Group to build the country's first flat-rolled steel complex; the complex, which produces hot-rolled, cold-rolled and galvanised products, became operational in 1994. Incentives included duty-free imports of equipment, eight-year exemptions from corporate income taxes, and permission to bring in foreign skilled workers. During the same period, the NTS Steel Group constructed a state-of-the-art bar and rod mill. The results of both these projects have reportedly been disappointing for investors. Start-up problems and below optimal operation of equipment, combined with unfavourable market developments and increased competition from low-price imports from Eastern Europe and the former Soviet Union have resulted in rising losses during 1995 and 1996. During the first half of this year, Sahaviriya lost 1.12 billion baht (\$47.2 million), while NTS lost 262.6 million baht (\$10.3 million). The difficulties facing the companies are affecting future plans. In the case of Sahaviriya, for example, plans to construct a \$1.4 billion mill for

primary steelmaking have been put on hold; the plant was originally planned to become operational in 1998.

The difficulties in the industry have not, however, slowed development of the industry altogether. Japanese and European investors are continuing to expand capacity at Thainox Steel, which produces cold-rolled stainless steel products. Six Japanese shareholders currently own 14 per cent of the company, while the French firm Ugine controls a 35 per cent share. Moreover, in June, Thai Cold Rolled Sheet PLC, a Thai-Japanese joint venture in which the Thai partners hold a 70 per cent share, secured a \$300 million loan from the Export-Import Bank of Japan and a \$62 million loan from five local financial institutions to be used to help finance construction of a 13.5 billion baht (\$531 million) cold-rolled steel plant. The company, which is an affiliate of Sahaviriya, expects to bring its 1.2 million tonne-per-year plant on stream in May 1997. Some 2 billion baht (\$79 million) in funds are to be raised from an initial public offering of 75 million new shares. In addition, NSM, some 45 per cent of which is owned by NTS Steel Group, signed a letter of intent with the American firm Nucor in June under which Nucor will provide technical and management assistance for a 1.5 million-tonne-per year compact strip mill.

Trade

Thai steel producers have complained about low-priced imports of long products from Eastern Europe and the CIS areas, and hot-rolled coil from the CIS, Ukraine, Kazakhstan, China and North Korea. In the case of the hot-rolled coil, the Thai industry has claimed that exporters were selling their steel at prices that were some \$150 per tonne less than those prices prevailing in the originating countries.

The Government has responded by taking a number of measures to assist the industry. For the one-year period beginning 21 August 1996, charges of 16 and 9 per cent will be applied to imports of steel structural sections and cold-rolled stainless steel, respectively. This is in addition to the 400 baht (\$15.75) normal duty. Duties on mesh-quality wire rod and wire rod for other purposes were raised to 20 per cent, from 10 and 17 per cent, respectively. Waivers for the additional duties are possible, upon application to the Thai Board of Investment. The new surcharges were introduced as a temporary measure, until such time as the country adopted antidumping laws. A related petition to double the duty on hot-rolled sheet was being considered by the Government in late August.

Vietnam

Industry conditions

On 1 October 1996, the Vietnamese Government announced production targets for a number of industries for the year 1997. In the case of steel, production was expected to more than double, rising from about 518 000 tonnes in 1996, to 1.1 million tonnes. The targets are to be presented to the country's National Assembly, for its consideration.

Under the country's master plan for the steel industry, Vietnam will need to produce 10 million tonnes of steel per year by the year 2005. To meet this goal, the country envisages building a 2-million-tonne-per-year, \$2.5 billion integrated steel facility. The facility, which would in all likelihood be a joint venture, would target 2005 for start-up. In support of its strategy, high priority is being placed on developing the country's iron ore reserves, a portion of which would be used by the planned steel plant. Currently a consortium headed by Germany's Krupp Forder and including Japan's Mitsubishi and South

Africa's Gencor, has begun drilling at the site of Vietnam's largest known ore deposit. The group hopes to establish a joint venture with Vietnam Steel Corporation to mine 10 million tonnes of iron ore per year. The joint venture could only go forward in 1998, upon completion of a detailed feasibility study.

Trade

An August report indicates that the Vietnamese Government was considering reinforcing a ban on steel imports as the local market was edging toward crisis, with falling sales and growing stocks. In the case of Vietnam Steel Corp., sales reached only 35 per cent of expected levels during the first half of the year. The situation has also been affected by the start-up of four new steel joint ventures involving VSC and foreign partners during 1996. These new plants, which have a combined annual capacity of 740 000 tonnes, have been operating at about 60 per cent of rated capacity. Mill operators expect it will take several years to bring the facilities up to their rated production capability.

Apparently the Government initially introduced the ban on imports in March 1996, but it was not strictly enforced. In addition to enforcing the import ban, steel producers have asked that provisions under which certain parties could import steel duty-free, be withdrawn. This provision had been available to specified foreign firms who were constructing premises. Particular concern has been raised over steel rod imports from the CIS area, which were not much more expensive than Vietnamese material, even after taking some 40 per cent import duties and related charges into account.

CENTRAL AND EASTERN EUROPE

Iron and steel industry managers and government representatives from central and eastern Europe and Russia, met in Romania in June for a three-day meeting to discuss steel industry restructuring in the region. The meeting, which was supported by the European Union, was held with a view towards enhancing co-ordination and consultation among countries. Among the issues discussed were:

- the development of a common investment strategy that would avoid duplication and, as a result, overcapacity;
- individual restructuring and conversion programmes for steel companies;
- different instruments that could be used to create jobs in non-steel activities; and
- the criteria that companies need to meet in order to obtain finance from investors.

The next such meeting will be held in the Spring of 1997, in the Czech Republic.

Bosnia-Herzegovina

The reconstruction of the Zenica steelworks, an integrated long products facility that also produces pipe, was discussed at an intergovernmental meeting between officials from Bosnia-Herzegovina and Iran in July, with Iran pledging to release a fifth of a \$50 million credit that was pledged to Bosnia-Herzegovina for setting up small businesses and for reconstruction.

The former Yugoslav Republic of Macedonia

Difficulties in finding investors has slowed Government plans to privatise Skopje, the former Yugoslav Republic of Macedonia's sole steelworks (apart from one other company that produces pipes). Production at the 1-million-tonne-per-year mill has restarted after a virtual 18-month stoppage. The mill, which produces a variety of flat-rolled products, plans to export to Europe, the United States and Japan.

Moldova

According to a May report, Moldova steelworks, a 1.1 million tonne-per-year electric furnace facility that produces long products, is to be privatised by year-end. Under the privatisation plan, 49 per cent of the facility would be held by the self-proclaimed state of Trans-Dniester, with the balance to belong to a works collective. The company exported some 97 per cent of its 700 000 tonnes of production in 1995, shipping material to the United States, Italy, Spain, Canada, Mexico, Israel and Morocco. The plant reportedly is experiencing problems acquiring scrap, about 95 per cent of which is imported. Russia and Ukraine have been the principal sources of the scrap, accounting for 70 and 25 per cent of supply, respectively.

Poland

Officials from the Belgian firm Sidmar, the European Bank for Reconstruction and Development and Huta Katowice were to meet in July to discuss the financing of a \$250 million thin slab caster and hot strip mill that would be jointly owned by Sidmar and Huta Katowice (each would have a 50 per cent interest). The new mill, which would replace an existing facility, would become operational in 1999.

In terms of investment and the streamlining of operations, steel industry restructuring is reportedly about 30 per cent complete in Poland. One of the problems that is reportedly emerging is a deficiency in the country's capacity to produce flat products. Growth in the economy is resulting in revised, upward projections in steel consumption, with Polish experts now estimating that production should be on the order of 10 million tonnes by the year 2000. With the closure of open hearth furnaces and increased continuous casting, a domestic scrap shortage of about 1.5 million tonnes (per year) is foreseen.

Romania

The Romanian steelmaker Calarsi, some 70 per cent of which is Government-owned, is reportedly turning to the private sector to raise capital. The enterprise hopes to raise \$19.2 million through the issue of three-year domestic bonds, which would be convertible into company shares, and through the issue of \$25 million in international corporate bonds. The firm has equity capital of about \$2.03 billion.

Romania's largest long products producer, Siderurgica SA, continues to modernise; a new billet caster was to become operational in October, with a new electric furnace to be brought on-line in September 1997. The modernisation is being financed with credits that are guaranteed by the Government. With the increase in electric furnace capacity, the company's open hearths will be phased out. Siderurgica is in the early stages of privatisation, with share coupons having been issued to employees.

The US Trade and Development Agency (USTDA) is providing funds to the Romanian Ministry of Industry to conduct a study to determine the feasibility of producing tinplate in Romania. The US firm USX Engineers is to conduct the \$306 000 study, some \$250 000 of which is to be financed by the USTDA. The study will examine the size, location and potential markets for the tinning line, which would be Romania's first.

The Japanese Government has reportedly pledged to support the process of privatisation and industrial restructuring in Romania through loans that will be used for re-equipping the Sidex iron and steel plant at Galati and modernising the Constanta harbour and several Romanian plants. Sidex, one report indicates, is likely to remain state-owned until 2006.

The Federal Republic of Yugoslavia

Steel production in the Federal Republic of Yugoslavia should rise to 650 000 tonnes by the end of 1996, which would return it to its pre-sanction levels. Steelmakers in the Republic, however, reportedly facing intense competition from eastern European suppliers who, the industry maintains, have been dumping steel in the Yugoslav market. Most of the unfair competition was said to be from neighbouring Bulgaria and Romania.

NEW INDEPENDENT STATES OF THE FORMER SOVIET UNION

As indicated elsewhere in this report, steel exports from the new independent states of the former Soviet Union (NIS) area have attracted increased attention in a number of areas, in the light of weakening market conditions and declining prices. In the case of Turkey, steel producers have expressed concern about the dumping of NIS steel in their market. The situation has been said to be particularly acute in hot-rolled and cold-rolled sheet, with many smaller producers being pushed to the point of bankruptcy.

Russian Federation

Raw materials

Developments affecting raw materials include the following:

- The Russian Government has reportedly approved a proposal that would temporarily restrict exports of ferrous scrap. As of the latter part of August, a directive implementing the proposal had yet to be introduced. Under the proposal, the Ministry of Foreign Economic relations would issue export licenses. Approval of a license would require a contract with a foreign partner.
- Also, as of August, Russian officials were negotiating agreements on the supply of chrome ore from Kazakhstan. Previous agreements were aborted at the beginning of the third quarter of 1995. Imported ore is needed to enable Russian producers to produce stainless steel.

- Half of Chinese Taipei's iron ore imports were sourced in Russia in 1995. China Steel, which purchased 2 million tonnes of ore, is reportedly exploring a joint venture to operate a steel mill in Siberia.

Industry conditions

The Russian Metallurgy Committee has presented a proposal to help steel firms address their financial problems, through a reduction in income taxes. The problems appear to have become more severe this year, due to a downturn in Asian markets for long products, and rising energy and freight costs. Shares in privatised steel companies such as Novolipetsk, Zapsib and Mechel are reportedly being sold for a fraction of their market price. A mid-1996 report indicates that steel companies owed the Government 1.9 trillion roubles (\$352 million) in back taxes, and 210 million roubles (\$39 000) in fines. In addition, debts to the railroads totalled 450 billion roubles (\$83 million). Insolvency has reportedly increased barter trade in steel, which was accounting for 55.5 per cent of the market in mid-year, compared to 45.9 per cent in 1994.

In the case of Amurstal steelworks in eastern Russia, which is partly owned by Australian investors, the situation has deteriorated to the point that the company is now in receivership. The Deputy Mayor of Komsomolsk had been appointed to resolve the company's financial problems, which include a sizeable debt to the local power company. One of the solutions calls for the company's assets to be sold to a new company, with foreign investors taking a 51 per cent share. Creditors would convert all or some of the debt owed into equity. A capital injection of approximately \$5 million is reportedly needed to resume operations.

Foreign co-operation and investment

A German consortium led by a division of Siemens AG announced it will build a 400 million Deutsche mark (\$265 million) rolling mill for fine and medium-grade steel in Russia. The steel produced by the plant is to be used largely in automobile production. Siemens' share in the project, which is being built for the steel firm Oskol, will be 180 million Deutsche marks (\$119 million). The project is being financed by a consortium of German banks, with credits to be repaid through a barter arrangement.

In May, the Russian Government signed an agreement involving a 1 billion Deutsche mark (\$662 million) loan from Germany. Among the projects to be financed by the seven-year, 4 per cent loan is the modernisation of the Magnitogorsk steelworks. The agreement specifies that 80 per cent of the loan must be used to buy German equipment. The loan will enable Magnitogorsk to continue with its construction of the cold-rolling mill originally ordered in 1993. In support of the company's modernisation, the Russian Government has ordered a programme of state support for the company. Assistance is to include helping to secure financing for the completion of the enterprise's cold-rolling mill, and an exemption from the compulsory sale of its hard currency revenue from exports during the period 1997-2000, provided the revenue is reinvested in the mill. The European Bank for Reconstruction and Development is also reportedly examining a financial proposal involving the company.

The Chase Manhattan Bank was reportedly working with the US Overseas Private Investment Corporation to provide as much as \$400 million in credit to US-Russian joint ventures in various industries, including metals and mining. The credits, which would be limited to \$25 million for any project, would be used primarily to purchase equipment and services from US companies.

Trade

In the field of trade:

- Mexico has imposed final antidumping duties of 29.3 per cent on imports of hot-rolled coil and coiled plate from Russia.
- The Russian steel industry is concerned about low-priced imports from Ukraine. The Government has been asked to identify companies that were dumping, and take appropriate actions.

Ukraine

Raw materials -- Ferrous scrap

Ukraine has reportedly passed a decree under which an export tax of 30 per cent will be applied to exports of ferrous scrap. The measure is intended to assure a reasonably priced supply of domestic material for domestic users.

Industry conditions

While overall Ukrainian industrial output declined by 3.1 per cent during the first half of 1996 (compared to the first half of 1995), there were certain sectors where improvement occurred. Rolled steel production, for example, increased by 18 per cent. In the field of trade, steel exports increased by some 48.8 per cent during the first five months of the year, contributing importantly to an overall increase in Ukrainian exports.

Foreign co-operation and investment

Ukrainian steelmaker Donetsk is continuing with a modernisation programme. The first stage of the programme, which involved the installation of Russian pipemaking technology and equipment for producing auto parts, has been completed. The company is now examining ways to finance the second phase, in which an electric furnace shop will replace open-hearth steelmaking using German/Austrian technology. Donetsk produced 800 000 tonnes of steel in 1995, some 50 per cent of which was exported. More than 80 per cent was shipped to the Far East. Chinese Taipei and Indonesia have been large importers of the company's billets, with Indonesia importing slabs. Thailand, on the other hand, has been an importer of the company's plates.

Efforts to raise some \$600 million to finance modernisation at Ukraine's Yenakievo steelworks are apparently running into difficulty. A contract to install a continuous caster has been signed with the German firm Mannesman Demag, but the project will not proceed until financing has been arranged. The firm also has plans to install a new cold-rolling facility.

Uzbekistan

Uzbekistan's lone steel producer, Uzbek Iron and Steel Works, a long products producer with annual crude steelmaking capacity of about 1.1 million tonnes, is proceeding with a modernisation programme which will result in the installation of an electric furnace and the phasing out of three remaining open-hearth furnaces. Completion of the programme is scheduled for 1998, at which time the company expects to be able to obtain international certification for its output.

LATIN AMERICA

In mid-year the Latin American iron and steel institute ILAFA issued a statement urging governments to take action against growing volumes of steel that were being exported from the area comprising the former Soviet Union, on unfair terms. Signatories of the statement included mills and industry groups in Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Panama, Peru and Venezuela. The problem was seen as particularly acute in Chile, Colombia and Peru.

Argentina

The International Finance Corporation, a member of the World Bank Group, is considering a \$95 million loan to the steelmaker Acindar to assist the company in restructuring its debt. Acindar is reportedly facing a refinancing risk with a \$150 million bond issued in 1993. Additional funding will also be provided to allow the final phase of Acindar's modernisation programme to proceed.

Paraguay

The Paraguayan Government reportedly has plans to privatise state-owned Aceros Paraguayos, a bar and rod producer with annual capacity to produce 150 000 tonnes of finished products. The company is Paraguay's sole steel producer.

Trinidad and Tobago

The International Finance Corporation announced in June that it had signed financing agreements for a long-term loan of \$82.4 million for Caribbean Ispat, Ltd., a producer of bar and rod products. The firm will use the loan to modernise its facilities and conduct an environmental upgrade to bring it into compliance with World Bank environmental standards. The modernisation programme supported by the IFC's financing is expected to enable the company to produce internationally competitive products with lower production costs and higher yields.

Venezuela

State-owned Sidor is to be privatised in two parts, with the tubular products division to be sold separately from the flat and long products operation. The two divisions may be privatised simultaneously, or the flat and long products portion may be privatised first (perhaps by the first quarter of 1997). Eleven companies have reportedly been pre-qualified to bid in the sale of the firm. Five of the 11 companies are Mexican, while one is Venezuelan. The other companies are located in Argentina (one company), Brazil (two companies), the Republic of Korea (one company) and Japan (one company). Among the

prerequisites for pre-qualification was a corporate network of at least \$250 million, as well as annual steel production capacity of at least one million tonnes.

AFRICA AND THE MIDDLE EAST

Egypt

Egypt's Ministry of Industry has reportedly signed a contract with Japan's International Co-operation Agency to study the feasibility of establishing a flat products steel plant in the country. A seven-person team from Japan went to Egypt in March to discuss the study, following which (in June) a four-man consultancy team returned to Egypt for further discussions. Egyptian authorities have targeted the year 2015 for such a project.

Iran

According to plans announced by the Iranian Ministry of Mines and Metals, Iranian steel production should grow by 1 million tonnes per year in each of the next ten years, until a target level of 17.5 million tonnes is reached (in 2006). Once domestic demand has been met, the country would take a more active role in international markets. Emphasis was being placed on promoting private sector metallurgical projects.

A Ministry official indicated shares in state-owned NISCO might be sold on the Tehran stock exchange in five years time. According to existing law, it would be possible for the Government to sell 99 per cent of the company.

Saudi Arabia

Austria's Voest Alpine and Germany's Schloemann Siemag have been awarded a contract to construct a 3.3 billion riyad (\$880 million) steel plant for Saudi Iron and Steel Company (Hadeed), which is owned by the Saudi Basic Industries Corp. group (SABIC). In addition to commercial loans, credits are being provided by the German Hermes Export Credit Facility and the OKB Austrian Export Credit Facility. The transaction is the first major multi-sourced credit financing for a SABIC group company supported by an export credit agency. Some 70 per cent of SABIC is owned by the Saudi Government. The new plant will be designed to produce up to 850 000 tonnes of flat-rolled and galvanised steel.

South Africa

The Industrial Development Corporation has recently completed a government-sponsored study of South Africa's carbon steel industry. The study is one of several commissioned by the industry and trade department in support of the Government's effort to formulate a new industrial policy for the country. The study found that the country's largest steel company, Iscor, was selling electro-galvanised steel domestically at prices that were 17 and 36 per cent above prices in the United States and Europe, respectively. Dual pricing -- where domestic prices are higher than export prices -- was seen as common; the premium charged by Iscor, however, was viewed as high when compared to the situation in other countries. The study also found that some 15 per cent of Iscor's steel deliveries were rejected by domestic buyers due to problems related to product quality.

Other developments in South Africa include the following:

- The European Union and South Africa are negotiating a trade agreement that would liberalise trade between the two areas. South African tariffs on steel imports currently range from 10 to 18 per cent for specialty steel, while some steel tubes, some of which can be imported duty-free, generally carry tariffs of 10 to 15 per cent.
- In the field of investment, Columbus Stainless is building a new steel plant which is expected to produce some 600 000 tonnes of steel by 1998. Some 85 per cent of the production is expected to be exported.

Zimbabwe

In mid-year, China's Shougang International Trade and Engineering signed an agreement with the Zimbabwe Government for assistance with the Zisco steelworks. Shougang is to assist with relining of a blast furnace. The Chinese Government is reportedly to provide \$35 million for the reline, while the Zimbabwean Government and Zisco will provide \$15 million each. In return, Zisco is to supply billets to China and South East Asia to facilitate loan repayment.

NORTH AMERICAN STEEL MARKET: AT THE EPICENTER OF CHANGE

BY

MR. BARRY D. SOLARZ
VICE-PRESIDENT, TAX AND TRADE
AMERICAN IRON AND STEEL INSTITUTE, ON BEHALF OF
THE AMERICAN IRON AND STEEL INSTITUTE'S NORTH AMERICAN MEMBERS

The American Iron and Steel Institute (AISI) -- which represents Canadian, Mexican and U.S. steel producers -- is grateful for the opportunity to talk about the North American steel market at this OECD Steel Committee policy dialogue with dynamic non-member economies. And before I begin, it is important that you understand that, when I use the phrase "North American steel market," I am referring to all three countries -- the United States, Canada and Mexico.

The point I would like to start with is that the North American steel market today is a textbook example of industrial revitalisation. Thanks to the privatisation of the Mexican steel industry, the new North American steel industry is now totally private -- and we cannot say this about many other regions of the world. Thanks to the tens of billions of dollars in modernisation expenditures that steel producers throughout North America have made in recent years, it is also rapidly changing and increasingly customer-driven. Ten years ago, we might have been talking about Japan or Germany -- but today, it is **North America** that stands at the epicenter of change in the world steel industry.

When we look at the North American steel industry today we see: world class, electric arc furnace thin-slab casters; internationally competitive integrated mills employing the latest technologies and processes to cut costs and improve product quality; and both kinds of mills using steel scrap and steel scrap substitutes in new and innovative ways.

We see as well: cutting-edge R&D and environmental engineering projects; unprecedented levels of recycling; the widespread use of advanced process controls, computers and lasers in finishing mills; new galvanising lines and independent processors; state-of-the-art service to large and small customers; just-in-time inventory systems; an aggressive approach to developing and expanding steel markets; and a new awareness of and focus on public relations.

Perhaps most important, we see North American manufacturers of steel-containing products who themselves have returned to world class status.

I will begin by talking about current market conditions and the short range outlook for the steel industry in each of the three NAFTA countries. But what I hope will be more useful in stimulating discussion -- and what I would really like to focus on -- are the key **challenges, opportunities and developments** that are likely to affect North American steel producers and the North American steel market over the next five years. In so doing, I think we need to address not only developments within

North America but offshore as well. The reason is obvious: North America is operating in a global market.

Current conditions, short term outlook

In providing a brief overview of current market conditions and the outlook for next year in the U.S., Canada and Mexico, I begin with a caveat: AISI does not make forecasts. Therefore, whenever I talk about what we might expect in 1997 -- or thereafter -- this is not an "AISI view." It represents my personal reading of what most outside analysts are saying. With that out of the way, let us look at where we are today and where we may be heading next year.

In the United States, consumer debt remains high, but unemployment (5.2 per cent) is near a six-year low, and inflation (annual core rate of 2.8 per cent) is close to a 30-year low. While the overall GDP is growing at a steady, if modest, 2.5 per cent a year, U.S. steel-consuming markets are experiencing faster growth (as much as 7 per cent or more on a year-to-year basis according to Paine Webber). The bottom line is that most analysts expect continued strong housing and automotive sales to help the U.S. maintain high levels of finished steel demand at about 100 million metric tons a year in 1996 and 1997 -- regardless of who wins the Presidential election this November. At the same time, steel company profits are down this year compared to 1995 -- operating income is about \$1 billion less than in the first half of last year; steel exports have declined; and steel imports in recent months (spurred by a 30 per cent EU gain) have risen sharply. So, what most analysts are now predicting for the U.S. steel industry in 1997 is a continuing robust U.S. steel market, a stronger dollar, little growth in exports and the threat of increased imports, which could further restrain steel prices.

In Canada, government fiscal restraint, slow growth in disposable income, a weak construction market and anemic consumer spending on semi-durables and durables have all combined to keep overall economic growth at a low level-- only 1.8 per cent GDP growth is expected this year. As a result, finished steel consumption in 1996 is likely to fall below the level of 1995 -- to about 12.2 million metric tons compared to 12.8 million tons last year. Most analysts, however, now expect that, thanks to strong export growth, lower interest rates and a rebound in residential construction, the GDP could rise to 3 per cent in 1997. Now that the auto industry strike has been settled, Canadian steelmakers should benefit from these developments.

In Mexico, as a direct result of the severe financial crisis that struck at the end of 1994, the GDP went down by nearly 7 per cent and finished steel consumption declined by more than 40 per cent in 1995 compared to the year before (from 10.4 to 6.2 million metric tons). But, thanks to the 135 per cent increase in Mexican steel exports in 1995, Mexico's production of raw steel that year actually increased by 18 per cent. In addition, it now appears that Mexico's overall economy is again on the upswing -- the GDP is expected to grow by 3 per cent this year, steel consumption in the Mexican market is again on the rise and the long climb back seems finally to have begun. Most analysts expect continued modest economic growth in 1997 and a slightly stronger peso.

Key developments to watch in North America

In considering the developments to watch in North America over the next **five** years, the one everyone has their eyes on is the likely effect of substantial new electric furnace capacity -- as much as 15 million tons of new thin-slab flat-rolled capacity in the U.S. alone by 1998. Will there be overcapacity

in North America? What will the effect be on North America's integrated producers? And what will this new capacity do to imports?

Taking these questions in turn, the concern about overcapacity is real, but we also need to remember that North America remains arguably the only major steel-producing region in the developed world where there is **not** currently significant overcapacity. Regarding effects on North American integrated producers, two points should be obvious. First, North America's new thin cast sheet producers will compete for market share in an increasing number of markets in North America -- and offshore. Second, North America's integrated producers will need to accelerate their efforts to cut costs and improve service to maintain market share. Then, there are the effects on imports. Most analysts predict that imports will indeed suffer a hit, but views differ on how much.

To summarise, it seems probable that some portion of this new capacity will displace imports, some will go to exports, some will get absorbed by higher demand -- and, to the extent that all three of these developments occur, the concern over overcapacity could diminish. But one thing is clear: the North American steel market in the year 2000 will be driven by **low-cost, high quality, service-driven** North American production. It will be vastly different and **much more** efficient than the North American market of 1990.

A second key development to watch is the significant -- and surprising -- rise in steel intensity in the North American economies. There is currently mounting evidence of a **structural** increase in steel demand, especially in the United States. And this is occurring at a time when steel intensity in Japan and other countries is continuing to decline. There are at least two reasons why this is happening. First, North American producers have made creating new steel demand and intensifying market development activities in the areas of automotive, construction, appliance and packaging a top priority. And second, thanks to a continuing drive to improve competitiveness, North America today is one of the lowest-cost producers of steel-containing goods in the world. In addition, in considering this issue of steel intensity, we also need to look at the substantial potential for further major gains in Mexican steel intensity, given Mexico's current level of economic development and infrastructure building needs.

A third key development -- and one which will affect the other two -- is the condition of the Canadian, Mexican and U.S. economies over the next five years. As I have already indicated in my remarks about current conditions and the outlook for next year:

- the Canadian economy, which has been fairly flat due to reduced government spending and weak consumer demand, is showing signs of renewed growth;
- internal demand in Mexico, which has been deeply depressed, is again on the rise as Mexican exports of steel and manufactures continue at record levels; and
- the U.S. economy, which has a worrisome amount of consumer debt amid low unemployment, is surprisingly strong as it produces slow, sustained, non-inflationary growth with high levels of steel demand.

How long any of these trends remain in place will depend on many factors. They range from national politics to exchange rates to international developments. Suffice it to say that views differ among economists and analysts of North America. The International Iron and Steel Institute (IISI) is predicting that steel demand in the NAFTA region between the 1995-96 peak and the average around the year 2000 will remain at about 120 million metric tons. But as AISI looks at the future, we remain optimistic about our ability to **create** new steel demand.

I mentioned at the outset that North America is operating in a global economy, and I would next like to turn to the challenges posed by this economy. But before I do, I think it is important to answer an issue that many of you may be wondering about -- namely, how has the NAFTA worked?

The answer is that, since the December 1994 collapse of the peso, the NAFTA has not produced the benefits to the North American economy that we and other proponents had expected. However, as the Mexican economy starts to recover, we **can** expect to see a return to growing and more balanced intra-NAFTA trade. And so, in spite of last year's difficulties, we have always kept our eyes fixed on the long term. Our view has been that: (1) the NAFTA did not cause the Mexican financial crisis; (2) Mexico stands a better chance of solidifying its economic recovery with the NAFTA; and (3) the agreement still holds the promise of producing greater economic growth and steel demand in North America than would otherwise occur, with accompanying benefits for North American steel producers and manufacturers of steel-containing products.

Key challenges posed by the global market

Like it or not, we live in a world of existing and emerging regional economic blocs, vastly different national economic systems -- and yes, significant market distortions and unfair trade -- especially affecting the steel sector. So, as North America's steel producers look at prospects over the next five years, we not only have worries about national tax regimes, regulatory policies, access to capital and technology, access to metallics, health care costs, legacy costs and international global climate change agreements. We also have serious concerns on the trade front -- about the substantial market distortions caused by private anticompetitive practices, closed markets, dumping and government subsidies affecting both steel and steel-containing products.

I began by talking about the dramatic turnaround in the North American industry and manufacturing base in the last decade. Yet, in spite of these gains in our international competitive position, North America's direct steel trade deficit persists (see attached data on North America's steel trade with non-NAFTA countries and IISI trade data by area). Our steel trade deficit with the rest of the world continues in spite of the fact that Paine Webber data (attached) show that per ton steelmaking costs in the U.S., Canada and Mexico are **all** lower than corresponding costs in Germany and Japan. Then, there is indirect trade in steel. While we lack historic data on indirect steel trade by North America, we do have such data for the United States -- which is the single largest piece of NAFTA trade in steel-containing products with the rest of the world and which would be determinative of overall NAFTA trade flows. What these data (attached) reveal is that, thanks to the restored competitiveness of our customers in the U.S. and throughout North America, we **have** made significant progress in lowering our indirect steel trade deficit with other regions of the world. Yet, this deficit continues, too.

With respect to both of these trade deficits, the question we must confront is why?

The world steel industry took notice when the United States alone exported more than 7 million tons of steel in 1995 (over 50 per cent to non-NAFTA markets), a 55-year high. But as North America's steelmakers examine our achievements, we are forced to ask: where do we go from here? The Yen is now at a three-year low against the dollar. Western Europe's steelmakers now admit that, in spite of all of their restructuring, they still have 30 million tons of excess capacity. And when we look at both Japan and the European Union -- two of the world's major steel-producing and steel-using regions -- what we see are developed economies that many now describe as stagnant, mature and plagued by slow growth. Meanwhile, there is still no universal, comprehensive, effective and enforceable Multilateral Steel

Agreement -- and steel cartels, closed markets, government subsidies and dumping continue to limit North American steel export opportunities in world markets.

Much the same can be said about indirect trade in steel. North American steelmakers recognise that, while it is good to ship our steel products abroad, it is even better when a lean, mean, internationally competitive North American customer base is able to export increasing amounts of North American steel-containing, value-added manufactured products to world markets.

Unfortunately, world markets are still not fully open to North American products. The U.S.-Japan auto trade agreement does constitute progress. But it has not ended the discriminatory keiretsu practices in that market, and we remain disappointed at the relatively low number of new foreign car dealerships established there. In addition, North America's indirect steel trade deficit now seems to be growing with the People's Republic of China, Thailand, Malaysia and other countries in the Pacific Rim where Japanese companies have set up manufacturing facilities. The Korean car market remains basically closed to all foreign competition, and there continue to be major barriers to free trade in autos in Brazil, Indonesia, Australia, China and elsewhere. And so, the question is also: where do our North American customers go from here?

Well, North American steel producers may not agree on how or even whether to apply national trade laws to imports from each other, but we are united that we will not allow the North American steel market to become a dumping ground for unfairly priced steel coming into North America from offshore. We are united that we must address the challenge of world surpluses of commodity-type steel and the ability of international traders to offer dumped steel "by the boatload," which suppresses prices and causes injury especially when overall demand weakens. We are united in our determination to maintain effective national antidumping and countervailing duty laws. And we are united as well in our support for efforts by our governments -- and customers -- to open up automotive and other steel-intensive markets in Japan, Korea and elsewhere.

Let me give you two more examples of how we are now moving to develop a common North American trade policy position on unfair trade by offshore competitors.

- Over the past year and a half, North America's steel producers, through AISI, have urged our respective governments to consider a co-ordinated approach in addressing the problem of trade diversion, imports of dumped steel from the former USSR and the European Union's quota regime on certain imports from Russia, the Ukraine and Kazakhstan. We appreciate that our governments have raised this issue in the OECD Steel Committee, and would encourage them to keep doing so. Meanwhile, Mexico already has an antidumping order on steel imports from Russia; Canada has one on steel imports from the Ukraine; and in the United States, Geneva Steel has just filed a case under the Antidumping Act of 1916 against sales by two trading companies of steel from Russia, the Ukraine and China. Based on what we are now hearing in the North American marketplace, concern is again growing about steel imports from the former USSR. As a result, AISI's North American members are monitoring these imports closely on a monthly basis.
- We are also currently urging our respective governments to take co-ordinated action to address the massive South Korean government subsidies that are to be provided to Hanbo Steel for the purpose of building up that company's capacity to produce flat rolled steel. The government-owned Bank of Korea's granting of \$4 billion in loans at a rate of 1.5 per cent is, in our view, one of the most flagrant examples in recent years of enormous, unwarranted government assistance to steel. That is why we have urged our governments to look at all

possible ways of addressing this issue, including taking action in the WTO. Our concern is that this build-up of subsidised capacity in South Korea will cause harm to both flat rolled and pipe and tube producers in North America.

Based on these examples alone, it would be an exaggeration to say that we are now at the dawn of a “North American steel trade policy.” But North America’s steel producers have begun to recognise since the negotiation of the NAFTA that we do have a clear and common interest in defending the North American market against unfair trade practices by non-NAFTA governments and producers.

At the same time, we have also come to realise that, in the 21st century, **all** steelmakers will face a common threat -- the challenge of competing materials. This is why North American producers have urged that steelmakers everywhere recognise that we have a common interest in promoting the use of steel as **the material of choice** for our manufacturing customers.

Key opportunities awaiting all of us

Over the next 10 years, many steel industry analysts expect international steelmaking costs to converge, technologies to merge, and the lines between integrated and electric furnace steel production to blur. In the face of such trends, AISI and our North American steel-producing members have stressed that collaborative efforts to grow the markets for steel should be a top priority for steelmakers everywhere.

Our ability to succeed in enhancing the value of steel will be a function of **cost, performance and quality**. But compared to aluminum, plastics, concrete and lumber, steel continues to hold enormous advantages. Not only is steel the **most affordable, high-value** engineering material, but its recycling rate is second to none, the industry has the ability to meet significant global pressures to conserve energy and the environment -- and steel remains synonymous with safety.

While trade issues continue to attract much of the press attention, it may surprise you to learn that most of AISI’s budget now goes to market development and joint partnerships with customers. Our North American customer partnerships are unique. No other competitive materials industries or steel industries in other regions have anything quite like them. Steel producers everywhere need to work harder to identify least expensive steel solutions to customer needs. There may always be trade disputes but, if steel’s customers **ever** stop thinking of steel as their material of choice, **the steel industry world-wide** loses. Fortunately, in a number of key areas, steel producers **are** responding aggressively as a world industry. Let me cite a few examples.

Automotive. In a most impressive display of international co-operation, 37 steel companies from 20 countries and six continents are participating in a two-year, multi-phase, \$20 million project called “Ultra-Light Steel Auto Body” (ULSAB). ULSAB’s goal is to optimise the design of the “body in white” to help ensure that the car of the future will be made of steel. The consortium has engaged with Porsche Engineering to demonstrate the best of known technology. We are convinced it will show that current steels are among the most advanced engineering materials available -- and with significant potential to go further. Just how far? We believe ULSAB will prove: (1) that up to a 35 per cent reduction in auto weight can be achieved with steel; (2) that steel’s basic properties are best suited for crash protection; (3) that steel is the most recyclable material; and (4) that steel is far more affordable than competing materials.

Thanks to AISI’s eight-year old Auto-Steel Partnership and the IISI’s efforts such as ULSAB, the industry **is** halting the move toward competing materials in its biggest customer industry with new

design and technological advances in steel. In recent years, the steel content in cars and light trucks has been **rising**. And with international projects such as ULSAB, we aim to keep it that way.

Residential Construction. Steel is also sharing with the world community its knowledge of, and message on, steel framing in residential construction -- our fastest growing market. Working closely with the National Association of Home Builders (NAHB), AISI is supporting efforts of the IISI and Kozai Club of Japan to advance steel framing world-wide. The IISI held a conference on steel framing last fall at the NAHB Research Center in the Washington area, and AISI representatives have assisted in seismic tests conducted in Japan. Given the major advantages of steel over lumber in such areas as price stability, strength and environmental performance, AISI's goal is to go from a base of 500 new steel-framed houses in 1992, to 55,000 in 1995, to a projected 25 per cent share of all new home starts in North America -- or about 325,000 new houses -- by the year 2000. If we can do it, we are talking -- just in this one area -- about creating roughly two million tons of **new** annual steel demand in the United States.

Life Cycle Analysis. Steelmakers world-wide also know that steel -- the most recyclable **and recycled** material -- has many other environmental advantages over competing materials when viewed on a "life cycle," cradle-back-to-ladle basis. AISI is therefore pleased to participate in the IISI's initiative to develop a more complete environmental profile of steel as a material.

Steel's Performance in Disasters. AISI is also proud that we have been asked to send experts to Japan in the wake of the Kobe earthquake to do further tests on steel's performance in structures hit by this disaster. Once again, our message is that steel structures, when properly designed, save lives and outperform the competition.

Infrastructure. The development and rebuilding of infrastructure world-wide is another area of significance to steelmakers everywhere. From transportation structures to storm water management systems, the world steel industry should be working together to let customers know that steel can provide solutions.

Public Awareness Campaign. AISI is also playing a role in developing support for a North American steel public awareness campaign -- a proposal to initiate a major integrated communications campaign in the United States and Canada to change the current misperceptions about our industry and to drive home the point that steel is a strong, light, flexible, environmentally friendly, high tech product. The idea that such a campaign is important has the support not only of AISI members but of a cross-section of the North American steel community. And now on a global level, the IISI has just agreed to establish a new Communications Subcommittee in its Market Development Committee, and North America's steelmakers plan to be active there as well.

Conclusion: we need a market-driven world steel industry

In sum: to enhance steel's value vis-à-vis competing materials, to win the competition with other materials, to expand steel usage, and to solidify steel as the material of choice in the 21st century should be the highest priority for steelmakers around the world. Yes, substantial new low-cost steel capacity is being built in North America, and some of it will displace imports. But North American and offshore producers will both be condemned to a "zero-sum" game without aggressive growth in steel consumption.

The question thus becomes: how do we best enhance steel's comparative value? North America's steel producers would submit that, in addition to focused market development and best-practice manufacturing, the most effective way to remain a competitive material is to ensure that **competitive market factors** -- not government subsidies or private cartel practices -- drive investment, production and international trade in steel.

Long-term, we think that **only a market-driven industry** will create the best comparative value for steel -- the material with the lowest cost, highest quality and best performance. Only the market's discipline will ensure this. And we hope this will be the central message of this OECD symposium.

North American Balance of Steel Trade

(000) Net Tons

Year	Finished Steel Mill Products		
	Imports	Exports	Balance of Trade
1989	13 691	4 982	-8 709
1990	13 413	3 280	-10 133
1991	12 585	5 410	-7 175
1992	12 943	2 775	-10 168
1993	11 445	1 922	-9 523
1994	22 157	1 616	-20 541
1995	15 833	7 482	-8 351
6 mos 1996	7 592	2 924	-4 668

Source: U.S. Department of Commerce, Bureau of the Census
Statistics Canada - SECOFI

United States Balance of Steel Trade Excluding Canada and Mexico
(000) Net Tons

Year	Finished Steel Mill Products		
	Imports	Exports	Balance of Trade
1984	20 961	566	-20 395
1985	18 751	406	-18 345
1986	15 254	519	-14 735
1987	14 172	484	-13 688
1988	14 570	1 196	-13 374
1989	11 906	3 103	-8 803
1990	11 739	1 493	-10 246
1991	10 463	2 817	-7 646
1992	10 344	1 249	-9 095
1993	9 575	962	-8 613
1994	1 384	890	-16 494
1995	13 956	3 580	-10 376
6 mos. 1996	6 103	907	-5 196

Source: U.S. Dept. of Commerce, Bureau of the Census.

U.S. INDIRECT STEEL TRADE WITH NON-NAFTA COUNTRIES
1984 - 1995

Automotive Imp./Exp./Balance** (In Mil. N.T.)	Machinery Imp./Exp./Balance** (In Mil. N.T.)	Other Imp./Exp./Balance** (In Mil. N.T.)	Total Imp./Exp./Balance** (In Mil. N. T.)
1984 - 4.0/0.3/-3.6	3.4/2.9/-0.5	2.3/1.3/-1.1	9.7/5.0/-5.2
1985 - 5.0/0.3/-4.8	4.0/2.8/-1.2	2.8/1.0/-1.7	11.8/4.1/-7.7
1986 - 5.8/0.3/-5.5	4.6/2.7/-1.9	2.9/1.0/-1.9	13.3/4.0/-9.3
1987 - 5.7/0.4/-5.3	4.5/2.7/-1.8	3.0/1.2/-1.8	13.2/4.3/-8.9
1988* - 5.7/0.9/-4.8	4.9/3.6/-1.3	2.9/1.5/-1.3	13.5/6.0/-7.4
1989 - 5.0/0.8/-4.2	4.7/4.0/-0.7	3.0/1.7/-1.2	12.7/6.5/-6.1
1990 - 4.4/0.9/-3.5	4.6/4.2/-0.4	2.7/1.7/-1.0	11.7/6.8/-4.9
1991 - 4.2/1.1/-3.1	4.1/4.7/+0.5	2.7/1.9/-0.6	11.0/7.7/-3.2
1992 - 4.1/1.5/-2.6	4.1/4.6/+0.5	2.8/2.1/-0.7	11.0/8.2/-2.8
1993 - 4.1/1.5/-2.6	4.5/4.7/+0.2	3.0/2.1/-0.9	11.6/8.3/-3.3
1994 - 4.2/1.5/-2.7	5.1/5.0/-0.2	3.2/2.2/-0.9	12.5/8.7/-3.8
1995 - 3.8/1.6/-2.2	5.4/5.7/+0.3	3.2/2.5/-0.7	12.4/9.8/-2.6

* Excludes indirect trade with Canada but not with Mexico.

** Balances do not necessarily add due to rounding.

Source: Department of Commerce Trade Data and AISI Steel Coefficients

World Steel Trade by Area, 1994 (million metric tons)

Importing area	Exporting Region											
	European Union(12)	Other Western Europe	Eastern Europe	Former USSR	North America*	Latin America	Africa & Middle East	PR China	Japan	Other Asia	Oceania	Total Imports
European Union (12)	49.9	7.4	5.3	2.1	0.1	0.7	0.4	0.0	0.2	0.1	0.0	33.3
Other Western Europe	7.0	1.6	1.0	1.0	0.0	0.4	-	0.0	0.2	0.0	-	11.4
Eastern Europe	0.8	0.3	1.2	0.8	0.0	0.0	-	0.0	0.0	-	-	3.1
Former USSR	0.3	0.1	0.1	2.9	0.0	0.0	-	0.0	0.4	0.0	-	3.8
North America *	10.1	1.2	0.9	2.4	6.2	3.8	0.5	0.1	3.7	1.7	0.5	31.3
Latin America	1.7	0.2	0.3	0.2	1.1	3.4	-	0.0	0.4	0.1	0.0	7.3
Africa	3.2	0.6	0.8	0.2	0.1	0.1	0.0	0.0	0.3	0.0	0.0	5.4
Middle East	2.2	1.5	0.8	0.3	0.0	0.1	0.0	0.1	0.6	0.3	0.0	5.9
PR China	1.2	1.4	0.9	7.8	0.1	0.8	-	-	4.3	5.0	0.0	21.5
Japan	0.1	0.3	0.1	0.3	0.0	0.5	0.0	0.2	-	3.8	0.2	5.7
Other Asia	4.6	4.5	4.8	9.4	0.4	4.4	1.0	1.7	11.8	7.2	2.1	52.0
Oceania	0.2	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.4	0.3	0.5	1.7
Total Exports	81.5	19.1	16.2	27.4	8.1	14.4	2.1	2.2	22.4	18.7	3.4	215.3

* IISI defines "North America" here as Canada and the U.S.

Source: International Iron & Steel Institute

World Steel Dynamics
World Cost Curve Reference Plant Comparisons as of March 1996
(\$ per metric tonne shipped)

Item	USA	Canada	Mexico	Japan	Germany
Currency/\$	1.00	1.36	7.46	105	1.47
I/O Ratio: Liquid steel/CRS	1 196	1 202	1 317	1 168	1 196
Major materials cost/tonne shipped					
Coking coal	32	34	26	34	39
Iron ore/sinter/pellets	62	60	51	60	69
Scrap (before credits)	50	48	40	48	<u>48</u>
Total raw materials cost	144	143	117	142	155
All other materials cost	173	166	122	201	185
Labor cost					
Employment cost/hour	35.00	28.00	6.50	38.00	42.00
MH/tonne	4.3	4.8	9.8	4.4	4.4
Total labor cost	152	134	64	167	193
Total Operating Cost	469	443	303	510	534
Financial expense					
Depreciation expense	28	26	28	80	55
Interest Expense	10	12	25	32	9
Total financial expense	38	38	53	112	64
Pretax cost	507	481	356	622	598
Cost through process					
Coke ovens	124	117	59	111	131
Blast furnace	158	147	103	140	162
Liquid steel	221	207	150	205	226
Slab	259	243	170	241	268
Hot-rolled coil (P&O)	336	317	219	314	357
Cold-rolled coil	435	409	281	414	465
S.G.&A. and taxes #	469	443	303	510	534
Cost from process to process					
BF (or scrap) to LS	63	60	47	65	64
LS to slab	38	36	20	36	43
Slab to HRC (P&O)	77	74	49	73	88
HR (P&O) to CR coil	99	93	62	100	109
S.G.&A. and taxes #	34	34	22	96	68

Reference plant comparisons do not reflect differences in product quality.

State and local taxes.

Note: Reference plant cost figures in a number of cases are well above the costs for the lowest cost units in that particular country

Source: World Steel Dynamics (developed with Donald F. Barnett).

**MARKET SITUATION AND INDUSTRY OVERVIEW:
CURRENT AND SHORT-TERM OUTLOOK FOR BRAZIL AND SOUTH AMERICA**

BY

**MR. ARNALDO SERRAO
METALLURGY GENERAL COORDINATOR, MINISTRY OF MINES AND ENERGY**

As the only country in South America with a seat on the OECD Steel Committee, Brazil was asked by the Secretariat of this Committee to comment on data covering this entire region.

It has thus tried to include in these notes some data covering South America as a whole, while avoiding in-depth assessments of the particular situation of each country, with the exception of Brazil, which we represent.

SOUTH AMERICA - GLOBAL INDICATORS

South America consists of ten countries, which together with the other Latin American nations, are members of the ALADI - Latin American Integration Association. This also includes Guyana, Suriname and French Guiana.

The ten South American nations covered in this presentation have a total population of 306 million (1994 data) making up 5.5 per cent of the global population. The joint GDP of these countries totalled US\$ 1 027.5 billion in 1994. Brazil's GDP accounted for 51.8 per cent of this total, followed by Argentina with 20 per cent.

SOCIAL AND ECONOMIC INDICATORS

COUNTRIES	POPULATION million of Inhabitants (1994)	GDP			
		1994		ANNUAL CHANGE RATES (%)	
		US\$ billion	SHARE(%)	1994	1995
Brazil	152	562.7	54.8	5.8	4.1
Argentina	34	206.0	20.0	7.4	- 2.5
Venezuela	21	61.5	6.0	- 2.9	2.0
Chile	14	60.0	5.8	4.1	8.0
Colombia	36	53.4	5.2	5.6	5.5
Peru	23	44.1	4.3	12.8	7.5
Ecuador	11	14.7	1.4	4.2	2.5
Uruguay	3	11.5	1.1	5.1	- 1.5
Paraguay	5	6.9	0.7	3.0	4.0
Bolivia	7	6.7	0.7	4.2	3.5
Total South America	306	1 027.5	100.0	-	-
World Total	5 614	25 223.5	4.1	-	-

Note: Data not available for Guyana, Suriname and French Guiana.

FOREIGN TRADE - 1995

COUNTRIES	EXPORTS		IMPORTS		BALANCE (EXP. - IMP.) US\$ billion
	US\$ billion	%	US\$ billion	%	
Brazil	46.5	40.6	49.6	42.5	- 3.1
Argentina	19.5	17.0	18.5	15.9	1.0
Venezuela	16.0	14.0	14.6	12.5	1.4
Chile	14.2	12.4	11.0	9.4	3.2
Colombia	8.7	7.6	11.0	9.4	- 2.3
Peru	3.5	3.1	4.0	3.4	- 0.5
Ecuador	2.9	2.5	2.8	2.4	0.1
Uruguay	1.8	1.6	2.4	2.1	- 0.6
Paraguay	0.8	0.7	1.7	1.5	- 0.9
Bolivia	0.6	0.5	1.1	0.9	- 0.5
Total South America	114.5	100.0	116.7	100.0	- 2.2

In general, recent developments may be considered as positive, with good economic prospects for the region. Over the past few years, almost all these nations have returned to economic growth, overcoming stagnation and recession that assailed Latin America as a whole during much of the 1980s, today viewed as the “lost decade”.

In most countries, this return to growth is associated with certain common benchmarks, outstanding among which are:

- depletion and consequent revision of the development model based on import substitution, which sought high levels of self-sufficiency but resulted in excessively closed economies, hampering development within a world-wide scenario of rapid technological advances and increasing globalisation.
- renegotiation of foreign debts, whose high interest rates limited financing capacity for regional development, in parallel to curbing inflation which reached extremely high levels in several countries.
- trade liberalisation, through across-the-board reductions in import taxes that reduced or eliminated non-tariff barriers, added to the positive effects of regional integration associations or agreements, enhancing synergy among economies in the region.

All the economies of South America are deeply involved in projects fostering to intra-regional associations, based on a variety of models but all speeding up the regional integration process. This has resulted in an upsurge in intra-regional trade, boosting local and foreign investments, due to expanding markets and the appearance of several multinational projects. These are found mainly in infrastructure areas such as electric power, oil and gas, telecommunications, highways and railroads.

The principal regional agreements are:

- MERCOSUR - SOUTHERN CONE COMMON MARKET. Launched in 1991, this currently links Brazil, Argentina, Paraguay and Uruguay in a Customs Union.

- ANDEAN PACT. Set up in 1969, this gained new life in 1994 with the Customs Union set up between Colombia, Venezuela and Ecuador. It also includes Peru, which should join the Customs Union in 1996, and Bolivia which is exempt from the Common External Tariff.
- BILATERAL OR MULTILATERAL FREE TRADE AGREEMENTS. These include the Group of Three - G-3 (Mexico, Venezuela and Colombia), as well as bilateral agreements between Chile and the MERCOSUR, Venezuela, Mexico and Colombia.

Negotiations are currently under way over a Free Trade Agreement between the MERCOSUR and the Andean Group, expected to be concluded in mid-1997. Within a wider context, it is worth mentioning the negotiations of the Free Trade Area of the Americas (FTAA) covering 34 American nations. The III Summit Meeting of nations intending to join FTAA, whose launch is scheduled for 2005, will be held in Brazil in May 1997.

Common to the South American economies, this scenario of a return to growth based on a market economy model, with inflation under control and ample trade liberalisation, has increased the attractiveness of this region for international investors. Backed by easily available, high-grade natural resources in the region, this upsurge in investments underwrites an optimistic outlook for the sustainable development process. In turn, this should help overcome regional problems due to under-development, drawing closer to OECD standards.

As the current development stage in South America involves investments in infrastructure projects that are heavy steel consumers, this prompts optimistic demand forecasts for iron and steel products in the region.

THE REGIONAL STEEL INDUSTRY

There are currently nine steel-producing countries in South America, whose 1995 raw steel production topped 34.6 million tons, representing 4.6 per cent of global output. The largest producer in this region -- Brazil -- accounted for 72.5 per cent of this total.

SOUTH AMERICA - STEEL DATA CRUDE STEEL PRODUCTION (10⁶ MT)

1990	1991	1992	1993	1994	1995
29.1	30.9	32.2	33.8	34.9	34.6

Source: ILAFA

PRODUCTION AND CONSUMPTION (CRUDE STEEL) - 1995

COUNTRIES	PRODUCTION		APPARENT CONSUMPTION		CONSUMPTION PER CAPITA
	10 ⁶ MT	SHARE (per cent)	10 ⁶ MT	SHARE (per cent)	Kg/inhab.
Brazil	25.1	72.5	13.8	55.0	85.0
Argentina	3.6	10.4	3.4	13.5	92.0
Venezuela	3.6	10.4	2.4	9.6	111.6
Chile	1.0	2.9	1.8	7.2	127.6
Colombia	0.7	2.0	2.1	8.4	58.6
Peru	0.5	1.5	0.9	3.6	37.7
Others (Uruguay, Paraguay, Bolivia and Ecuador)	0.1	0.3	0.7	2.7	26.7
Total South America	34.6	100.0	25.1	100.0	82.3
World Total	749.2	4.6	739.3	3.4	129.5

Source: IISI/ILAFA

Overall, the South American steel industry has achieved production levels relatively higher than regional consumption, making the region a net exporter of steel products. This imbalance between production and consumption will tend to shrink over the next few years, due to rising consumption buoyed by a return to growth, as well as the new profile of the regional steel industry, reshaped by advances in the privatisation process.

FOREIGN TRADE (STEEL PRODUCTS) - 1995

COUNTRIES	EXPORTS		IMPORTS		BALANCE EXP.-IMP.
	10 ⁶ MT	Share (%)	10 ⁶ MT	Share (%)	10 ⁶ MT
Brazil	9.7	79.5	0.3	8.3	9.4
Argentina	1.3	10.7	0.8	22.2	0.5
Venezuela	1.1	9.0	0.2	5.6	0.9
Chile	0.1	0.8	0.6	16.7	(0.5)
Colombia	...	-	0.6	16.7	(0.6)
Peru	...	-	0.6	16.7	(0.6)
Others (Uruguay, Paraguay, Bolivia and Ecuador)	...	-	0.5	13.8	(0.5)
Total South America	12.2	100.0	3.6	100.0	8.6
World Total	248.7	4.9	233.5	1.5	-

Source: IISI/ILAFA

With regard to consumption, it has been noted that most of the South American nations have managed to shed the recession and stagnation that prevailed throughout almost the entire 1980s. This is today reflected in a steady increase in steel consumption that is well above global averages. This general trend should continue over the next years.

According to the IISI, regional steel consumption is forecast as follows:

REGION	1990 (10 ⁶ MT)	1995 (10 ⁶ MT)	2000 (10 ⁶ MT)	1995/90 % p.a.	2000/95 % p.a.
S. America (*)	16.7	22.5	28.0	6.1	4.5
World	647.4	652.2	714.0	0.1	1.8

(*) It includes Central America

In more immediate terms, and focusing only on the coming year, the following situation seems likely for apparent consumption of steel products:

COUNTRIES/REGIONS	CONS.(10 ⁶ MT)	FORECAST (10 ⁶ MT)		CHANGE (%)	
	1995	1996	1997	96/95	97/96
Brazil	12.0	12.5	13.3	4.2	6.4
Others	8.7	9.1	9.4	5.0	3.4
Total South America	20.7	21.6	22.7	4.3	5.1
World Total	652.2	657.1	679.8	0.8	3.4

Source: ILAFA/IISI

Analysing the basic factors underlying positive expectations for the development of steel markets in the region, the following points stand out:

- A return to economic growth, having overcome the principal stumbling-blocks through: renegotiation of foreign debt; curbing inflation; increased domestic savings; and the inflow of foreign capital.
- Widespread economic liberalisation through an across-the-board reduction in import taxes and regional integration trade agreements.
- Privatisation which -- in the case of the steel industry -- has already been completed in Brazil, Argentina, Chile and Peru, with only Venezuela still retaining one major state owned steel-mill -- SIDOR -- with privatisation scheduled for early next year. Consequently, government holdings in the South American steel sector dropped from some 70 per cent of the total in 1985 to below 8 per cent in 1995.

THE BRAZILIAN ECONOMY

Gross domestic product - GDP

The accumulated GDP for the first six months of 1996 remained stable, compared to the same period the previous year, with growth of only 0.02 per cent. However, an upward trend reflecting the return to growth is expected for the rest of this year, bringing the GDP up by some 3 per cent.

The about-turn in this process was basically due to the positive effects of monetary policy, in parallel to the gradual drop in interest rates and lighter constraints on credit, fostering a return to growth in the industrial sector.

Inflation

The Brazilian government assigned top priority to curbing inflation, which continues to show positive results. The accumulated inflation for the first half of the year reached 6.13 per cent, compared to 8.87 per cent over the same period the previous year. Inflation of some 10 per cent is forecast for 1996 as a whole.

Trade balance

Brazil's foreign trade posted commercial flows of some US\$ 46.1 billion over the first six months of 1996, 2.2 per cent lower than figures for the same period the previous year.

This was due mainly to the 9.7 per cent drop in imports, which reached record levels during the first half of last year, buoyed by massive imports of consumer durables, particularly automobiles. This was largely responsible for the US\$ 3.2 billion trade deficit posted in 1995.

The recovery in exports reflects shrinking demand on the domestic market during the first half of this year, compared to the same period the previous year.

TRADE BALANCE	1 st HALF/96	1 st HALF/95	CHANGE (per cent)
Exports	22 919	21 449	6.9
Imports	23 215	25 716	-9.7
Balance	-296	-4 267	93.1

Source: MICT/SECEX

The foreign trade balance may well remain negative, despite recent government measures designed to even out this gap. An accumulated deficit of some US\$ 3 billion is forecast for this year.

With regard to foreign trade, it should be noted that despite impressive advances in trade between Brazil and other South American nations, particularly the MERCOSUR, the nation retains its position as a global trader. Exporting all over the world, the distribution for the first six months of 1996 is given below:

- EU 28.8 per cent
- Latin America 21.6 per cent
- MERCOSUR 14.3 per cent
- USA 19.6 per cent
- Asia 16.9 per cent
- Others 6.5 per cent

THE BRAZILIAN STEEL INDUSTRY

Performance - 1st half 1996

Production

Brazil's raw steel output totalled 11.9 million tons during the first half of 1996, down 3.2 per cent over production for the first half of 1995.

Finished and semi-finished products for sale registered 11.1 million tons produced, 0.9 per cent lower than figures for the same period the previous year.

This drop in production levels over the period was due to the temporary halts of equipment, as well as maintenance programs and revamps scheduled under steel-mill modernisation programs.

10⁶TM

BRAZILIAN STEEL PRODUCTION	1 st HALF/96	1 st HALF/95	CHANGE (%)
- Crude Steel	11.9	12.3	(3.2)
- Products	8.0	8.1	(1.2)
Flat	5.2	5.3	(1.9)
Long (1)	2.8	2.8	-
- Semi-Finished for Sale	3.1	3.1	-

(1) Excluding the rerolling companies' production.

Source: IBS

Exports

Steel exports totalled 5.5 million tons during the first half of the year, corresponding to US\$ 1 844 million.

The most impressive growth took place in flat steels, which fell to exceptionally low levels during the first half of 1995, due to soaring demand on the domestic market.

In contrast, the long products sector remained virtually stable, reflecting the meager attractions of the foreign market, where prices were undermined by excess supplies.

EXPORTS OF STEEL PRODUCTS	1 st HALF/96 A	2 nd HALF/95 B	1 st HALF/95 C	A/B (%)	A/C (%)
Quantities (10 ³ MT)	5 534	5 481	4 174	1.0	32.6
Value (10 ⁶ US\$ FOB)	1 844	2 015	1 471	(8.5)	25.4

Source: MICT/SECEX

Imports

Brazilian imports of iron and steel projects dropped 10.7 per cent during the first half of 1996 over the same period the previous year. This shrinkage was basically due to variations in industrial activity levels during the two periods under consideration.

IMPORTS OF STEEL PRODUCTS	1 st HALF/96	2 nd HALF/95	CHANGE (%)
Quantities (10 ³ MT)	129.3	144.8	(10.7)
Value (10 ⁶ US\$ FOB)	174.8	179.8	(2.8)

Source: MF/SRF

Consumption

Domestic consumption dropped 9.0 per cent during the first half of the year, compared to the same period the previous year. However, compared with the second half of 1995, the current situation reflects a recovery with growth of 15 per cent. This confirms the widespread growth trend noted in major steel consumption sectors, after the marked shrinkage during the second half of last year.

APPARENT CONSUMPTION OF STEEL PRODUCTS	1 st HALF/96 A	2 nd HALF/95 B	1 st HALF/95 C	A/B (%)	A/C (%)
Quantities (10 ³ MT)	6 093	5 298	6 696	15.0	(9.0)

Source: IBS

Prospects for 1996

The forecasts drawn up by the IBS - Brazilian Steel Institute point to the following figures for 1996:

- Crude steel production 25.3 million tons;
- Finished and semi-finished products for sale 23.5 million tons;
- Exports 10.3 million tons of steel products;
- Imports 258 000 tons of steel products;
- Apparent consumption should rise by some 4 per cent to 12.5 million tons of steel products.

Prospects for 1997

The investment program focused on modernisation, enhanced productivity and lower costs should forge ahead in Brazil's steel sector. Total investments for the year are forecast at US\$ 1.7 billion.

Growth in domestic demand for steel products should be bolstered by the following sectors:

- civil construction: due to rising investment in infrastructure sectors targeted by privatisation, as well as the housing sector due to expansion of financing mechanisms;
- automotive sector: due to development of investment programs for this sector totalling some US\$ 12 billion by the end of the decade, boosting output from the current rate of 1.8 million units to around 2.5 million vehicles by the year 2000;
- capital goods: due to widespread growth in investment levels, particularly in the industrial sector.

For 1997, the Brazilian Steel Institute forecasts that apparent consumption may well rise to around 13.3 million tons of products, reflecting growth of 6.4 per cent over the figures expected for 1996.

Due to these expectations, steel production estimates may well reflect growth of over 6 per cent, totalling some 27 million tons of crude steel.

INDUSTRY OVERVIEW

Financial situation

The South American steel industry has in general managed to revert the loss situation which prevailed through to the late 1980s and early 1990s.

Growth in the domestic market and rising international prices had a positive impact on this process. However, the determining factor was the restructuring process which was ushered in by privatisation. Virtually all companies implementing this process followed very similar guidelines:

- staff lay-offs with modifications in management processes, resulting in a massive upsurge in productivity and appreciable cost reductions;
- return to investments underwriting modernisation and automation of steel-mills, while also eliminating bottlenecks;
- reshaping product and market strategies, focusing on more competitive segments and shutting down obsolete plants, or phasing-out products that are non-competitive due to low production scale or obsolete technologies.

Looking at Brazilian steel-mills privatised between 1991 and 1993, seven companies were transferred to the private sector, with a production capacity of around 19 million tons. Their consolidated financial results are given below:

NET PROFIT (LOSS) FOR FISCAL YEAR - US\$ million	91	92	93	94	95
7 privatised companies	43.1	(281.0)	(189.9)	875.9	777.0
Total Steel Sector	(148.0)	(174.3)	(144.5)	1112.8	852.2

Bearing in mind that the restructuring process for Brazil's iron and steel sector is not yet complete, the return on investments after privatisation is merely in its initial phase. However, there are well-founded reasons to believe that the financial performance of this sector will remain positive over the next few years.

Particularly outstanding is the fact that a number of Brazilian steel-mills have succeeded in bringing in funding on the foreign market. Four have already issued American Depository Receipts (ADRs) traded on the New York Stock Exchange.

The expectation of positive results has allowed Brazilian steel-mills to develop relatively ambitious investment plans totalling US\$ 7.8 billion over the 1994 - 2000 period. Of this total, some 36 per cent will probably be self-financed, with 34 per cent coming from local investors and 30 per cent in foreign capital.

This program is basically slanted towards investments underwriting modernisation and cost-reduction in steel-mills, eliminating bottlenecks, upgrading product mixes, and improving environmental standards. All Brazil's steel-mills have been awarded ISO 9000 certification, and some are already preparing for ISO 14 000 certification.

These developments have been accompanied by massive improvements in productivity at the steel-mills, up 79 per cent between 1990 and 1995. In average terms, the productivity rates of Brazilian steel-mills are still lower than international figures, but by the end of the current program, most of them will be operating in accordance with these standards.

Returning to the broader situation of South America, provided the current situation of economic stabilisation and domestic market recovery continues, forecasts indicate that the prospects for positive results may well extend to the steel industry throughout the region. As already mentioned, the strategies adopted by these companies follow similar guidelines. Throughout the region -- with just a few exceptions -- steel-mills have posted positive results in terms of rising financial indices and productivity rates.

INDUSTRY STRUCTURE

The production structure of the South American steel industry differs greatly from country to country, due to national characteristics. These differences are to a large extent shaped by the historical context within which the existing industry was built up, within closed economies which sought to be self-sufficient as possible, while considering the steel sector as vital to national security.

In many countries, the main factor was the small scale of domestic markets, justifying only a limited range of products. In other cases, the availability of raw materials played a leading role in defining the production model.

With regard to raw materials, one of the principal factors was the availability of high-quality iron ore. In addition to Brazil -- the world's largest iron ore producer and exporter -- Venezuela, Chile and Peru are also regular exporters.

Another important raw material in defining the production structure was the availability of natural gas on a competitive basis for producing sponge iron. This made Venezuela the world's largest producer and exporter of this product, and also played an important role in defining the production model for Argentina.

As far as scrap is concerned it should be mentioned that South America consists basically of countries with a low per capita steel consumption. Which means that similarly to other less-developed regions, scrap generation is not high. Despite this, some countries such as Venezuela (100 per cent) and Argentina (57 per cent) base large portions of their output on the basis of EAF operating with DRI/HBI.

In the case of Brazil, due to the limited availability of natural gas, sponge iron production is limited. Steel produced in electric furnaces accounts for 18 per cent of the total, based mainly on domestic scrap and locally-produced pig iron.

The table below outlines the iron and steel industry production sector in South America in 1995:

COUNTRIES	PRIMARY IRON (10 MT)		CRUDE STEEL (10 MT)			
	PIG IRON	SPONGE IRON	BOF	EAF	OTHERS	TOTAL
Brazil	25 221	288	20 206	4 487	374	25 067
Argentina	1 496	1 334	1 568	2 049	-	3 617
Venezuela	-	3 782	-	3 564	-	3 564
Chile	855	--	940	73	-	1 013
Colombia	282	--	277	465	-	742
Peru	257	1	240	271	-	511
Others	103	--	90	69	-	159
Total South America	28 214	5 404	23 321	10 978	374	34 673

Source: ILAFA

Scrap imports by the South American nation's are almost negligible within the global context. A possible shortage of this raw material would have a relatively modest impact at the regional level.

In closing, a brief comment outlines the probable development of the installed steel production capacity and trade flows in the region.

During the 1970s, the South American steel industry typically had a steel import profile, as the production capacity of its various countries was insufficient to supply their respective markets. At the start of the decade, the South American steel industry held a 1.5 per cent share of world production.

The development in apparent consumption rose steadily throughout the decade at annual rates of around 7 per cent.

Based on this situation, expansion projects were implemented, with new plants built to cope with this steep upsurge in demand, with consumption forecast of around 35 million tons by the mid-1980s.

The South American steel industry planned and implemented the expansion of its production capacity, in step with its presumed requirements, which did not in fact materialise due to the severe economic recession which prevailed throughout the region during the 1980s.

Faced with this abrupt change in situation, many South American countries with modern new steel industries began to boost their exports in order to make economically efficient use of their production capacity and bring in foreign exchange earnings to honor foreign commitments.

By the mid-1980s, the South American steel industry had a 5.9 per cent share of the international market, compared to 2.0 per cent at the start of the decade, with 85 per cent of its exports channelled outside the region. It should be noted that these exports were mainly basic items (semi-finished products, coils for reprocessing, wire rods etc.).

This situation began to change during the late 1980s and early 1990s, spurred by economic liberalisation, privatisation and other transformations reshaping the economic profile of the region.

The South American steel industry currently represents some 4.6 per cent of global output, with a 4.9 per cent share of the international market. However, a new profile is noted for exports, with 43 per cent remaining within the region.

Economic stabilisation and the gradual recovery of domestic markets boosted steel consumption. Associated with increasing trade liberalisation, this situation paves the way for sweeping changes for the import/export sector.

These changes will also be greatly influenced by the new production model, based essentially on private companies. In contrast to earlier years, the industry will have to base its strategies on the quest for products capable to be competitive at the international level, free from subsidies or market protection mechanisms not compatible with WTO rules now being banished from today's dynamic economic scenario in this region.

THE SITUATION IN STEEL IN THE EUROPEAN UNION

BY

**MR. JACOBUS AARTS
DIVISION HEAD, EUROPEAN COMMISSION**

General economic situation in the European Union

Economic activity in the European Union remained weak during the first few months in 1996. On average, for the whole of 1996 domestic demand should grow by a mere 1.4 per cent and business investment by 2.2 per cent instead of the 3.5 per cent estimated in 1995. Overall, GDP growth, which had been estimated at 2.5 per cent in 1995, should reach 1.5 per cent in 1996 according to spring 1996 forecasts, thus indicating that the previous forecast for 1996 will have to be considerably downscaled.

Among the factors accounting for this slowdown, which began in the second half of 1995, are the end of the initial cyclical push due to stockpiling, the delayed impact of higher long-term interest rates during 1994, major swings in exchange rates in spring 1995 and the ensuing erosion of confidence throughout the European Union.

In view of the slowdown in economic activity, the employment outlook was also scaled back, and unemployment is not expected to fall below the present level of 11 per cent. Inflation should remain at a steady 2.6 per cent.

Steel market situation

The general economic slowdown in the second half of 1995 led to severe deterioration in the confidence of producers and consumers, reflected by a marked drop in demand and progressively lower prices on the steel market of the Community.

Consumers, traders and even producers began to run down inventories during the fourth quarter of 1995. This trend continued through to the third quarter in 1996 and although inventories are expected to get more or less back to normal, there is a tendency to keep them at a minimum level. The Community's steel output, which in 1995 rose to 156 million tonnes, i.e. an increase of about 3 per cent over the previous year, fell by 8.6 per cent during the first half of 1996 compared with the same period in 1995. For 1996, the Community's per cent is expected to be 5 per cent lower than in 1995.

Following demand saturation, lower prices within the Community and higher dollar rates, pressure from third countries on the Community market lessened for certain categories of product during the first half of 1996 compared with the very high level of the previous half-year.

On the other hand, exports rose during the first half of 1996 compared with the same period in 1995, but this tendency is expected to slow down during the second half of the year.

Ordinary steel

Flat products

Owing to production cutbacks at the end of 1995 and in early 1996, flat product inventories seem to be back to normal. Imports from third countries, which rose sharply in 1995, continued to be higher during the first half of 1996. Flat product prices in the European Union have dropped slightly since mid-1995 and this tendency is continuing. Customers are tending to delay new orders in view of the fact that supply is abundant and the outlook uncertain.

Long products

After the first half of 1995 when demand varied depending on the type of product concerned, the second half of the year featured an overall reduction in demand owing to reduced activity in the main steel-consuming sectors, such as construction and automobiles.

The *beam* market stagnated throughout 1995 following the slowdown in the construction and public works sectors. Furthermore, although the European Union production kept pace with changes in demand, imports from third countries made prices fall.

After very high demand during the first half of 1995, the *wire rod* market stagnated. Demand growth was therefore only 2 to 3 per cent in 1995 and receded sharply during the first half of 1996 compared with the same period in 1995.

As in the case of beams, *reinforcing rods* were affected by the depressed market: stagnating demand, export slump and sharp rise in imports. However, there seem to have been faint signs of recovery during the past few weeks.

World market

A supply surplus has been observed since mid-1995 due to a dip in international demand and an increase in production following the entry into service of new plant, especially in the United States. Moreover, exports from several sources, and in particular from the CEEC, the CIS and, to a lesser extent, from south-east Asia, rose on the European Union markets during the first three quarters of 1995. All these factors have made international prices recede since mid-1995.

Specialty steel

Overall demand decreased markedly during the first eight months of the year, chiefly through inventory readjustments, as stocks were far too high for the real consumption pace in 1995.

Inventories now seem to be settling down in most market segments.

Nevertheless, the pick-up in orders expected for the fourth quarter of 1996 is not yet apparent in the mechanical construction long-product sector, where the situation has stabilized at a not very satisfactory level. As a result, order books are thin, output has shrunk and prices are under strong pressure.

For stainless steel flat products, demand has been perceptibly picking up since the summer and is accompanied by a slight recovery in prices.

In 1997 the situation is expected to improve, but the information currently available gives no clue as to the extent of the improvement.

Steel tubes

After the higher output in 1995 (11.4 million tonnes, up by 1.4 per cent) for 1996, the outlook remains favourable only for OCTG (oil country tubular goods), since surplus inventories at the end of 1995 and weaker demand for other tube products may lead, for 1996 as a whole, to correspondingly lower apparent consumption and production, by about 10 per cent.

During the first half of 1996 the market for **small diameter welded tubes** deteriorated sharply compared with 1995 through marked drop in demand and a spectacular increase in imports during the fourth quarter of 1995. This caused stockpiling and had a negative impact on prices. The expected pick-up for the second half of the year could bring inventories back to normal and slightly higher sales. Nevertheless, for the year as a whole there will be a loss of production and apparent consumption of about 10 per cent.

In the market for **large diameter welded tubes** the situation continues to be as gloomy as in 1995. This sub-sector will not improve in 1996 since new export orders did not show any significant rise.

In the sub-sector of unwelded tubes, where demand was good up to end-1995, the outlook for 1996 suggests a 10 per cent downturn although activity in the North Sea should allow further improvements in the market for OCTG.

THE INDIAN IRON AND STEEL INDUSTRY

BY

**MR. RAGHUPATHY
JOINT SECRETARY, MINISTRY OF STEEL**

INTRODUCTION

India's modern iron and steel industry dates back to 1907 when the Tata Iron and Steel Company Ltd. (TISCO) was registered. Production at its Jamshedpur works commenced in 1911-12. In independent India, the development of the steel industry primarily vested in the state. For four decades, the industry grew in a highly protected and controlled environment, with massive tariffs, administrative control over prices and distribution and state allocation of import resources. The initial forays by both private and state enterprise were rewarded with success.

Since independence, more so with the commencement of the Five Year Plans, the Indian Steel industry has experienced substantial growth. Domestic production of crude steel has grown at an annual average compound rate of 6.1 per cent and that of finished steel at the rate of 6.8 per cent between 1948 and 1990. Indian crude steel output also grew from 1.5 million tonnes in 1951 to 15.1 million tonnes. While this growth took place at the direction and the initiative of Indian State and was guided by import-substitution strategy, the growth was not uniform over the entire period. Crude Steel capacity of integrated steel plants rose impressively from 1.5 million tonnes in 1950 to 8.9 million tonnes in 1967-68 at an annual average compound rate of 11 per cent. The annual rate of capacity expansion of this sector, however, stagnated between 1967-68 and 1991-92, the sole exception being commissioning of 1.5 million tonnes Crude Steel capacity at Visakhapatnam Steel Plant of Rashtriya Ispat Nigam Ltd.

India was a net exporter of carbon steel scrap in the sixties. Therefore, Electric Arc Furnace (EAF) units were encouraged in the private sector to utilise this resource domestically. These units, mostly small, along with tiny rerolling mills, which rolled billets produced by the integrated steelplants as well as the pencil ingots produced by the EAF units, were collectively called the secondary sector, as opposed to the primary sector, namely integrated steel plants. This sector grew steadily during the seventies and eighties. Presently 35 per cent of total crude steel capacity of 27.38 million tonnes is in the secondary sector.

ECONOMIC REFORMS

India is today witnessing a silent revolution in the steel industry. The Economic Reforms initiated by the Government since 1991 have added new dimensions to industrial growth in general and the steel industry in particular. Licensing requirement for capacity creation has been abolished, except for certain locational restrictions. The steel industry has been removed from the list of industries reserved for the public sector. Automatic approval of foreign equity investment up to 51 per cent is now available.

Price and distribution controls have been removed since January 1992, with a view to making the steel industry efficient and competitive. Restrictions on external trade, both import and export, have been removed. Import duty rates have been reduced drastically. Certain other policy measures such as reduction in import duty on capital goods (55 per cent to 25 per cent), convertibility of the Rupee on trade account, permission to mobilise resources from overseas financial markets and rationalisation of existing tax structure over a period of time have also benefited the Indian Steel Industry.

DEVELOPMENT SINCE 1991

The impact of the economic reforms on the steel industry in India has been tremendous. The total crude steel capacity of the Indian Steel Industry was 27.38 million tonnes in 1995-96, registering an increase of 23.6 per cent amounting to 5.22 million tonnes over 1991-92. Notably in the secondary sector, the rate of increase in capacity moved up from 1.5 per cent in 1991-92 to 24.0 per cent during 1995-96.

The total production of crude/ingot steel in India, during 1995-96, was 22.56 million tonnes as compared to 17.14 million tonnes in 1991-92 showing an increase of 31.6 per cent. Table 1 gives details of producer-wise production of crude steel. Out of total increase of 5.42 million tonnes over the period 1991-1996 addition of 2.17 million tonnes (40 per cent) and 2.79 million tonnes (51.5 per cent) was achieved during the last two years i.e. 1994-95 and 1995-96 respectively.

Table I. **PRODUCER-WISE PRODUCTION OF CRUDE STEEL**

Year	Main producers	Secondary Producers EAF-IF			(in million tonnes)	
					Grand Total	% Share of Secondary Producers
1991-92	12.95	3.30	0.90	4.20	17.14	24.5%
1992-93	13.66	2.98	1.20	4.18	17.84	23.4%
1993-94	13.90	2.50	1.20	3.70	17.60	21.0%
1994-95	15.20	3.07	1.50	4.57	19.77	23.1%
1995-96(P)	16.06	3.21	2.28	5.49	21.55	25.4%

P: provisional

Source: JPC

PIG IRON AND DRI PRODUCTION

The total production of pig iron was 2.80 million tonnes in 1995-96 as compared to 1.59 million tonnes in 1991-92 registering an increase of 76.1 per cent during the considered period. Earlier pig iron was produced primarily by the integrated steel plant of SAIL and RINL. Of late, the share of stand-alone pig iron units has increased significantly. Producer-wise details are in Table 2.

Table 2. **PRODUCER-WISE PRODUCTION OF PIG IRON**

(In million tonnes)				
Year	Main producers	Secondary Producers	Grand Total	% Share of Secondary Producers
1991-92	1.49	0.10	1.59	6.3%
1992-93	1.68	0.17	1.85	9.2%
1993-94	1.98	0.27	2.25	12.0%
1994-95	2.01	0.78	2.79	28.0%
1995-96(P)	1.74	1.06	2.80	37.9%

P: provisional

Source: JPC

There are presently 19 DRI units in the country with a total capacity of 5.62 million tonnes. A number of these units have/are planning to have downstream steelmaking facilities while others are merchant plants. This substitute for scrap witnessed tremendous growth in consumption, production and exports. The rapid growth in recent years can be attributed to significant addition to the DRI capacity, declining scrap imports, intensified DRI exports from India and the overall turnaround in the steel industry. The storage of metallic world wide and the high prices of scrap, created the need for developing alternatives in India for scrap. Realising its importance, the government delicensed this sector as early as in 1985. Additionally during the initial years, the DRI manufacturers also received priority allocation of natural gas and coal. The production of DRI has increased from 1.31 million tonnes in 1991-92 to 4.40 million tonnes in 1995-96, registering an increase of nearly 2.5 times over the considered period. India has emerged as the second-largest producer of DRI in the world after Venezuela. The production performance of this sector has been shown in Table 3.

Table 3. **PRODUCTION OF DRI**

(In million tonnes)		
Year	Productions	% Increase
1991-92	1.31	
1992-93	1.44	9.9%
1993-94	2.40	66.7%
1994-95	3.39	41.3%
1995-96(P)	4.40	29.8%

P: provisional

Source: JPC

FINISHED CARBON STEEL PRODUCTION

The total production of finished carbon steel in the country has been 21.4 (provisional) million tonnes in 1995-96 as compared to 14.33 million tonnes in 1991-92, indicating an increase of 49.3 per cent. Producer-wise production of finished steel has been shown in Table 4. The high share of the secondary sector in finished steel production is largely due to substantial supplies of semis, the basic feed material from the main producers for conversion to required shapes by rolling.

Table 4. **PRODUCTION OF FINISHED CARBON STEEL**

(In million tonnes)

Year	Main producers	Secondary Producers	Grand Total	% Share of Secondary Producers
1991-92	7.96	6.37	14.33	14.5%
1992-93	8.41	6.79	15.20	44.7%
1993-94	8.77	6.43	15.20	42.3%
1994-95	9.57	8.25	17.82	46.3%
1995-96(P)	19.59	10.82	21.39	50.6%

P: provisional

Source: JPC

The ratio of flat products in total production has been gradually increasing. The details may be seen in Table 5.

Table 5. **TOTAL PRODUCTION OF FLAT PRODUCTS**

Year	Non-Flat	Flat	Total	% Share Flat in Total
1991-92	8.12	6.21	14.33	43.3%
1992-93	8.56	6.64	15.20	43.7%
1993-94	8.19	7.01	15.20	46.1%
1994-95	9.80	8.02	17.82	45.0%
1995-96(P)	10.99	10.41	21.39	48.7%

P: provisional

Source: JPC

SPECIAL AND ALLOY STEEL PRODUCTION

India has a high growth industry producing special and alloy steels. This sector has witnessed a very rapid growth over the last five years. Table 6 shows that stainless steel production grew at an annual compound rate of 18 per cent over 1991-92 to 1995-96 while production of other special steel registered a growth rate of 13 per cent per annum over the same period. Of late, there has been a significant shift of production from mild/carbon steel to special and alloy steel in the EAF unit.

Table 6. **PRODUCTION OF SPECIAL AND ALLOY STEEL**

Year	In million tonnes)	
	Stainless steel	Other special Steel
1991-92	0.23	0.98
1992-93	0.26	1.04
1993-94	0.25	1.13
1994-95	0.32	1.45
1995-96(P)	0.44	1.60

P: provisional

Source: Alloy Steel Producers' Association (ASPA)

IMPORT AND EXPORT OF IRON AND STEEL

The total import of finished carbon steel has increased from 0.97 million tonnes in 1991-1992 to 1.50 million tonnes in 1995-1996. Imports stagnated at around 1 million tonne during 1991-1994, but increased by 60 per cent in a single year, i.e. 1994-1995, in response to general economic recovery. The import-basket has, so far, been dominated by flat products. But this trend may not continue with the commissioning of the new steel projects producing flat products. Another interesting development emerging from Table 7 is the increased imports of slabs and other semis in recent years. The import of pig iron declined from 1.52 million tonnes in 1991-92 to a negligible quantity of 4 000 tonnes, due to the increased availability of pig iron from RINL and other mini blast furnace units.

Table 7. **IMPORT OF IRON AND STEEL**

Year	Pig iron	('000 tonnes)		
		Semi-finished Carbon Steel	Re-rollable Scrap	Total Steel
1991-92	152	27	970	997
1992-93	73	5	1 080	1 085
1993-94	21	107	1 063	1 170
1994-95	1	230	1 706	1 936
1995-96(P)	4	350	1 550	1 900

P: provisional

Source JPC

Although India started exporting steel way back in 1964, exports were not regulated and depended largely on domestic surpluses. However, in the years following economic liberalisation, export of steel recorded a quantum jump as seen in Table 8.

Table 8. **EXPORT OF IRON AND STEEL**

Year	Pig Iron	Semis	('000 tonnes)		
			Finished Carbon Steel	Total Steel	DRI
1991-92	-	5	368	373	-
1992-93	16	154	741	895	200
1993-94	620	585	1020	1605	700
1994-95	466	399	873	1272	660
1995-96(P)	502	395	925	1320	850

P: provisional

Source: JPC

Export of semi finished and finished steel went up from 0.37 million tonnes in 1991-92 to 1.605 million tonnes in 1993-94. Over the same period, pig iron exports increased to 0.6 million tonnes. The DRI units also started exporting from 1992 onwards. Export of DRI went up from 2 lakh tonnes in 1992-93 to 8.50 lakh tonnes in 1995-96. The spurt in export of iron and steel, has been mainly due to various policy measures taken by the Government such as liberalisation of import-export policy, full convertibility of Rupee on trade account, etc. Export of steel from India consists mainly of semis, bars and rods and plates constituting 85 per cent of the total quantity. However, the export basket has changed of late to include value-added flat products like hot rolled sheets/coils, cold rolled and coated sheets etc. and substantial quantities of Pig Iron and DRI.

APPARENT CONSUMPTION OF FINISHED CARBON STEEL

Apparent consumption (i.e. production + imports - exports +/- variation in stocks) of finished steel, year-wise, has been shown in Table 9. It has increased from 14.84 million tonnes in 1991-92 to 21.6 in 1995-96. Increase in apparent consumption has not been uniform, fluctuating to as high as 21.8 per cent reflecting uneven growth in steel demand.

Table 9. **APPARENT CONSUMPTION OF THE FINISHED STEEL (MILD)**

(in million tonnes)	
Year	DRI
1991-92	14.84
1992-93	15.00
1993-94	15.32
1994-95	18.66
1995-96(P)	21.69

P: provisional

Source: JPC

INDIAN ECONOMY- DEMAND AND SUPPLY PROJECTION

The demand for steel in the domestic market as projected recently by the Ministry of Steel is shown in the following table:

Table 10. **DOMESTIC DEMAND-AVAILABILITY OF FINISHED STEEL IN INDIA**

(in million tonnes)		
YEAR	2001-2002	2006-2007
Demand Flat Products	16.19	24.16
Non-Flat Products	16.5	24.64
Total Finished Steel	32.69	48.8
Availability Flat Products	15.08	24.1
Non-Flat Products	16.93	19.91
Total Finished Steel	32.01	44.01
Gap (+)/Surplus(-)	0.68	4.79

The demand for finished steel is set to reach 20.24 (net) million tonnes by 1996-97. The flat, non-flat ratio is expected to be 46:54 in 1996-97 as against 42:58 in 1995-96 reflecting a gradual shift in consumption to accommodate the characteristics of an industrialising country. By 2001-2002, the demand for finished steel will reach 32.68 million tonnes. The flat/non-flat ratio will improve to 50/50. The projected scenario is based on the assumption of 6.02 per cent annual growth rate of GDP up to 2001-2002.

The projected increase in the demand for steel is sought to be met as follows:

1. Enhancing the capacity of existing plants through modernisation and expansion of the facilities.
2. Encouragement of private sector participation to set up greenfield plants.

While certain quantities of import will be inevitable, efforts will be made to maximise input substitution by adequate domestic production.

The demand for pig iron, sponge iron, alloy steel and ferric alloys is also projected to reach 3.45, 7.67, 3.16 and 0.3 million tonnes respectively during 2001-2002. In addition to meeting the domestic demand, India is expected to export 6 million tonnes of steel, 0.9 million tonnes of pig iron and 0.5 million tonnes of sponge iron.

Substantial production capacity needs to be established to meet the increased domestic demand for iron and steel and also for realising the export potential. A part of the incremental demand would be met by the existing integrated steel plants. Modernisation of the SAIL steel plant at Durgapur, Rourkela and Bokaro is likely to be completed shortly. The Tata Iron & Steel Co. Ltd. has already commenced the fourth phase of the modernisation. After modernisation, the existing integrated steel plant will produce more, more efficiently and more economically.

The private sector has showed tremendous enthusiasm in setting up greenfield steel capacity. State-of-the art technology routes are being tried for the first time in India. The study of the Ministry of steel has indicated that US\$8.33 billion is likely to be invested by the private sector in areas related to manufacture of iron and steel. Since 1991, 7 greenfield steel plants involving investment of US\$1.733 billion and capacity of 3.9 million tonnes of saleable steel have been commissioned. Another 13 projects have been cleared by the financial institutions at an estimated investment of US\$3.85 billion and annual capacity of 7.35 million tonnes of saleable steel and are under various stages of implementation. There are several other projects, some of them very major, under different stages of planning. Besides, investment of US\$55.6 million in pig iron projects and US\$176 million in sponge iron projects is also envisaged during the next five years. For the same period, it is planed to invest US\$4.58 billion in the public sector companies under the Ministry of Steel, SAIL's share being US \$4.17 billion. Most of the investment will be in the areas of modernisation, debottlenecking and AMR. R&D is also expected to command more attention.

Rapid industrial growth, coupled with massive infrastructure build up, has generated an excellent demand for iron and steel in most developing countries. Steel makers of the newly steel active countries like Korea, Brazil, India, Mexico, Venezuela and Taiwan have increased their presence in the global market because of their cost competitiveness. Past trends have indicated that efforts of steel producers from developed countries to retain and expand their position in the global market have met only with limited success. Therefore, the global market is expected to be in favour of the steel industries in the developing countries who have already made substantial advances in setting up production capacities. India is very well placed in this regard and the prospects of the Indian steel industry in the global context will have to be viewed against this background.

INDIA: THE ROLE OF GOVERNMENT IN DEVELOPMENT OF THE STEEL INDUSTRY

BY

**MR. RAGHUPATHY
JOINT SECRETARY, MINISTRY OF STEEL**

Policy objectives for steel

The iron and steel industry has been in many ways the engine of India's economic development in the post-independence era. Essentially, the steel industry had developed in response to domestic demand. Further, the growth of the industry has been shaped by the perception that India is endowed with an abundant supply of mineral resources such as iron ore, coal, etc. and has an inherent advantage in the production of iron and steel. In view of the above, the iron and steel industry has been given the core sector status and initially developed in the public sector.

Broadly, the policy objectives of the steel industry in India are stated below:

1. Economic exploitation of natural resources
2. To meet the domestic steel demand
3. To generate employment
4. To save/earn foreign exchange
5. To stimulate the growth of complementary industries
6. To meet the requirements of sensitive sectors like defence, railways, energy, small scale industries etc.
7. Creation of nucleus of industrial base for further development

State ownership and privatisation

In order that the basic economic development processes in the country are not hindered by inadequate supply of this vital industrial intermediate, the government retained control over distribution and pricing of steel produced by the major integrated steel plants until 1991. Further, considering the fact that development of an integrated steel sector required very large capital investment, this sector was developed primarily by the government in the public sector. The government wanted to prevent mushroom growth of the industry which could lead to creation of excess capacity and to avoid unjustified pricing which could adversely affect initial user sectors. There are, at present, six integrated steel plants

in the public sector, whose ownership, control and management is primarily vested with the government. Of late, the state funding of the public sector investment projects has declined, due to resource crunch experienced in the economy. Efforts are being made to raise resources through internal accruals and non government and commercial sources. This is expected to make the public sector management accountable and more responsive to the forces of the market. Also the government has initiated measures to disinvest part of its equity in the domestic as well as in the foreign markets.

Competitive policies

The government has taken various policy initiatives to make the iron and steel industry in India more efficient and globally competitive during the last five years. Economic reforms initiated since 1991 brought about far-reaching changes in the economic system, more particularly in the areas related to the steel industry. The major changes in policy were as follows:

1. In the New Industrial Policy, licensing requirement for capacity creation and investment has been abolished. Also, the steel sector has been removed from the list of industries reserved for the public sector.
2. The iron and steel industry has been included in the list of high priority industries where there is a provision for automatic approval of foreign, equity investment up to 51 per cent. This is subject to the condition that foreign equity covers the cost of imported capital goods and of foreign technology agreements up to specified limits.
3. Price and distribution controls have been removed since January 1992, with a view to make the industry efficient and competitive.
4. Restrictions on external trade, both import and export, have been removed. Import duty rates have been reduced considerably. These are further being brought down gradually as per recommendations of the Chelliah Committee.

Additionally, the steel industry has benefited from the policy changes in general. Some of these changes are as follows:

1. Import duty rate on capital goods has been reduced leading to lower capital costs of import intensive projects.
2. The Rupee has been devalued and made convertible on trade accounts. This has provided a boost to export of iron and steel.
3. Entrepreneurs have been allowed to mobilise resources from overseas financial markets. This would help not only to overcome the scarcity of domestic capital, but also enable the Indian entrepreneurs to take advantage of the lower interest rates. The steel producers like SAIL have resorted to GDR and ECB routes for mobilising resources from abroad. Efforts have been made to rationalise the existing system of taxes. Over a period of time, the MODVAT scheme has been substantially extended and the government is moving closer to a full VAT system. This would help in reducing cascading effects arising out of multiple-taxation.

Finance and investment

With the liberalised economic policy of the government coupled with the private entrepreneurs evincing interest in making inroads into the steel sector, private investment in this sector has already shown tremendous increase in the last few years. This trend will continue into the IX plan period perhaps with increased vigour. The total investment in the steel sector is expected to be more than US\$ 14 billions. With the involvement of the private sector and the emergence of new instruments of financing projects in the context of a very rapidly developing banking and financial sector, the resource mobilisation efforts of the companies will be innovative and perhaps quite different from those in the past. Support for the public sector is being discontinued. No investment is envisaged to set up greenfield plants by the government. The public sector producers are encouraged to generate internal resources and borrowings from the market (domestic and external) to meet their expansion and modernisation programmes.

Energy and environment

Iron and steel plants, both in the public and private sectors continued to give thrust on reduction of consumption of energy. In SAIL plants, the consumption of energy in four integrated steel plants has been 8.70 G Cal (including electricity consumption) per tonne of crude steel during 1994-95 and was even lower during 1995-96. SAIL has designed and tested a high velocity burner in a combustion research unit. It can be used for drying refractory lining uniformly and efficiently in Hot Blast Stoves blast furnace proper and coke oven batteries, Bokaro Steel have introduced post heating facilities for ladle in steel melting shop and this has resulted in the reduced skull formation, reduction in steel tapping temperature and improvement in ladle lining life.

TISCO has consumed 8.935 G Cal per tonne of crude steel in 1994-95 and 8.673 G. Cal per tonne of crude steel during 1995-1996. In order to reduce energy consumption TISCO has provided a cold blast oxygen enriched facility at "G" blast furnace, commissioned the rebuilt half battery with stamp charge facilities for better coke quality, commissioned new by-product plant at coke ovens, maximised steel production through LD route, cut down steel making through open hearth furnaces and increased liquid steel processing through continuous casting route by 14 per cent over 1994-95.

Mukand Ltd., Bombay, in order to reduce energy consumption, has installed directional porous plug in an ultra high power furnace for faster melting and for reducing tapping temperature, reduced circulation time of ladles to avoid preheating of ladles, saved electrical energy by tapping at a lower temperature, and installed energy efficient horizontal ladle preheating station to reduce fuel consumption.

The iron and steel plants have drawn up short term and long term action plans for expeditious achievement of pollution control.

SAIL plants and mines, during 1994-95, further consolidated their thrust on environment management and pollution control activities to bring the pollution level within norms. After identifying the areas needing attention, 115 schemes on Pollution Control Action Plan costing about Rs. 410 crore was drawn up in 1992 and implementation taken up vigorously. 90 schemes have already been commissioned and 25 are in different stages of implementation. An expenditure of approx. Rs. 11 crore is envisaged of which Rs. 7.3 crore is for the ongoing schemes. To date the effluent discharges from SAIL plants are within the statutory norms. Air emissions from about 70 per cent of the stacks are within limits and there are plans to bring the remaining also under control by 1996.

TISCO has made considerable progress in the area of environment protection. To date, Rs. 68-16 crores has been spent for installation of pollution control measures like dust catcher at “G” blast furnace, CGC car at battery N°5 which will provide clean oven top during coal charging, secondary fume extraction facility at LD, gas cleaning facilities at SMS 3 and 3 open hearth furnaces, DE system at coal handling plant at power plant and refractories production shop, fly ash ponding facility at power generation plant etc.

Visakhapatnam Steel Plant (VSP) has taken up elaborate measures to combat air and water pollution due to discharge of emissions, effluent etc. from the plant.

Many of the mini steel plants in the country, by and large, are complying with the specified pollution control norms.

We are acutely aware of the fact that there should be emphasis on sustainable development. The pollution and environment control norms have been made stringent. Though considerable progress has been achieved in the matter of environmental management in the steel industry, the situation is reviewed by the Government continuously.

Conclusion

It is noteworthy that the iron and steel industry had been the engine of India’s economic development. The impact especially of the public sector steel plants in the over all context of socio-economic development is all pervading. There is tremendous scope for the participation of private sector investment in the iron and steel industry under the changed economic environment.

THE SITUATION OF THE STEEL INDUSTRY IN THE ASIA-PACIFIC REGION AND THE SHORT (MEDIUM) TERM OUTLOOK

BY

**DR. HIROMOTO TODA
MANAGING DIRECTOR, THE JAPAN IRON AND STEEL FEDERATION**

EXPLANATORY NOTES AND REMARKS

The following are premises and definitions in this report.

Countries covered

When used in this report, Asia includes 7 ASEAN countries, Chinese-Taipei and Japan. In fact, however, Brunei has no production of iron and steel and ASEAN covers 6 countries. As regards Chinese-Taipei, it has many expansion plans in the steel industry and is taken into the study.

- a) Oceania is not included as the condition in the area is expected to be reported by Australia, an OECD Member.
- b) China also is basically excluded as OECD made a special request to Chinese Government to report on the conditions.
- c) The Republic of Korea is not included basically as it is a Member of the OECD Steel Committee and is expected to make a country report on its steel industry.
- d) As regards the Republic of Korea, however, there are some parts which need presentation in relation to the context of the report and are covered.

Iron and steel production capacity

Capacity of a production facility is defined considering balance with capacities of up-stream and down-stream processes, but where such data are not available, the capacity of the facility proper is shown as it is. Generally speaking, the latter case is majority and the capacity shown is usually bigger than "effective capacity" defined by OECD.

The capacity is also computed by assuming realisation rate of steel capacity expansion plans in each country. The realisation rate of an expansion plan is assumed by such factors as financial backing, position of the plan in the steel development program depending on the policy of the government and availability of technical assistance from developed steelmaking countries.

Basically the capacity expansion plans are at the point of June 1996 and some revision is made according to the development since.

Steel demand used as the basis in computing the realisation rate is mean demand level assumed.

The realisation rate of expansion plan and exactitude of assumption of each company are not authorised ones of related government or enterprises and are based on the personal judgement and opinion of the author.

Other

Tables are contained in the Annexes to this paper.

HIGH GROWTH RATE AND CHANGE OF ECONOMIC STRUCTURE

Entering 1990s, the economy of Asia shows a trend to keep a satisfactory growth pattern. Steel consumption increases also. There are many factors in this but they may be summarised as follows:

1. progress of economic growth and efforts toward self-help supported by flexible economic management including liberalisation in economic development policy (including also trend of progress mainly led by private initiative through promotion of privatisation);
2. accelerated expansion of foreign investment and manufacturing through industrial transfer by developed industrial nations;
3. shift from the economy heavily dependent on construction activity and civil engineering including completion of infrastructures, to the economy with increased weight of manufacturing;
4. formation of market scale fit to proper level of industry scale by change of scale and content pattern of economic growth;
5. formation of broad region market and effect of complementary economic development through regional co-operation such as territorial unification of ASEAN and various ODA from developed countries;
6. proper selection of economic growth line by historical and cross-sectional analysis and study of industrial development of developed industrial countries.

It may be said that the economic progress of Asia was possible through those factors working singly or in union. Basically it can be said that 50 years after World War II, the economy in Asia has takeoff period and entered further development period and many countries entered full-scale progress by self-help. Needless to say, the Asian economy has various factors such as similarities as well as differences among countries, varying stages of progress, results of regional co-operation and others. Its general description may be misleading for proper understanding, but it may be considered that the overall condition has reached a point which permits summarisation of background factors.

STEEL CONSUMPTION IN ASIA INCLUDING CHINA, JAPAN AND THE REPUBLIC OF KOREA IS CLOSE TO 40 PER CENT OF THE WORLD STEEL CONSUMPTION

In line with the economic progress, steel consumption in Asia maintains remarkable increase entering the 1990s. At the same time, the contents of the consumption show structural change.

1. Change in product mix -- Shift of weight from bars and shapes for the construction sector to plates and sheets for the manufacturing sector.

As the expansion of manufacturing is accelerated by transfer of some industries of industrial countries, the demand for plates and sheets increased and at the same time quality requirement from processing and assembly industry became severe. (Historical change of long and flat steel products in Japan is shown in Table 5).

2. Establishment of feed-back relation between steelmakers and processing and assembly industry on product needs. In industrial countries, such a relation had a big effect on comprehension of needs of steel user industry and development of steel products. Matching the needs of steel consuming industry by steel industry. Shift of some industries of industrial countries to Asia caused formation of such a relation with the processing and assembly industry. In this respect, general interest on ISO 9000 ISO 14000 series is high.
3. Steel consumption pattern undergoes diversification and change, but there is a limit to the improvement of quality in steel production which depends on melting scrap as iron source. However there are few countries which take development and protection policy for upper stream process and it is not easy to enter this field. There are cases where much attention and careful study is given to close investigation of technical and economic cost as well as progress of technological development of blast furnace, direct reduction and smelting reduction processes.
4. In this region, steel consumption per capita is below 150 kilograms in terms of crude steel excepting Japan, Republic of Korea, Chinese-Taipei and Singapore. In Singapore, about 90 per cent of people live in high-rise apartments and, with various type of vertical use of land, per capita steel consumption reached a level higher than 1 300 kilograms, the highest level in the world. It is difficult to grasp the statistics in Vietnam, and per capita steel consumption is roughly assumed to be at the level of less than 20 kilograms (1994).
5. With appearance of economic compact mills by remarkable progress of production technology, expansion of steel production enables some countries to catch up with industrial countries in a period shorter than before.

CHARACTERISTICS OF AND CHANGE IN STEEL PRODUCTION IN ASIA. STRONG INTEREST IN TECHNICAL INNOVATION, ECOLOGY AND FE SOURCE

Change in selection strategy of industry to be developed in line with diversification of economic structure

In the steel industry which is capital intensive, the minimum production scale of a steel mill which can compete fully in the international market is to have two blast furnaces and produce 5 to

6 million tons a year of crude steel. But to build such a mill, a vast amount of money is required as seen from examples of greenfield plants in industrial countries. Moreover, its gestation period of investment is long, about 10 years. Therefore, a private group in Asia which has a world-wide network of information is undertaking a search for growth industry toward the 21st century and careful selection of industry in which to invest. They indicate investment strategy to avoid the case where investment in the steel industry necessitating available funds being tied to a long gestation period would freeze the money, depriving flexible investment in a more promising industry.

Commercialisation of new and innovated iron and steel technology and careful study of their introduction

Every country in Asia has a strong interest in ensuring birth or possibility of development of a new production method for iron source. In particular, they show a special interest in Smelting Reduction Process which can adjust supply according to change in demand. As for Near Shape Rolling technology, some companies are considering its adoption as a key technology for medium to small scale sheet production, but they are wary of building pilot plants for commercialisation by the original group of the technological development. DC electric furnace is already introduced as a regular facility.

Strong awareness and measures for protection of earth's environment

As seen in the treaty of framework of global climate change, the recognition of environmental protection is strong in the Asian steel industry and together with intensification of environmental regulation in each country, built-in ecological facilities show an important trend. The Japanese government provides developing countries with environmental protection assistance called "Green Aid Plan" -- mainly to Asian and Chinese steel industry.

Development and expansion plans will increase steelmaking capacity by about 35 million tons by 2000

By adding up capacity of expansion plans as at mid-year 1996 which have secure factors financially and technically by each company, it may be seen that steel capacity will increase by about 35 million tons by 2000. The total of the Republic of Korea, Chinese-Taipei and ASEAN will reach about 90 million-ton level by 2000. As a result, some countries are reviewing their plans and some concern and discussion is beginning among groups of private investors on excess capacity, in view of the existing world-wide steel production capacity.

Concern of tightness of Fe source supply in the 21st century

Considering foreseeable trend in development of steelmaking in the world, the position of scrap in electric furnace steelmaking is seen as basically unchangeable. Generally recycled scrap supply is based on steel consumed 15 to 20 years before. The Asian steel consumption level from 1970 to 1975 was low and the supply of recycled scrap will be limited.

In the Asian region, many steel expansion plans are to be put in operation in and after the year 2000 and the scrap supply will be very tight then. On the other hand, in developed countries, recycled scrap will be of unfavourable quality reflecting increased use of surface treated steel sheet, sandwiched

sheet with synthetic resins, etc., and so the supply of high quality scrap will be gradually limited. However, use of scrap is important as a recycling of resources in view of environmental measures, and also it has an effect of indirect energy saving as steel scrap is full of canned energy.

Under such circumstances, there is an inducement for construction of upper stream facilities, but already the projects to be completed in 2000 to 2003 are under way. In the aspect of technological innovation, there is a possibility of success of commercialisation of new types of iron production processes such as the smelting reduction process, and careful study is continued. After 2000, it may be possible that after careful analysis of conditions, construction of an integrated steel mill is taken into consideration in view of the needs of steel users for better quality products, but for the time being it is expected that production of some products in down-stream fields in various patterns will be studied first.

THE STEEL INDUSTRY IN ASEAN AND CHINESE-TAIPEI; ACTIVE EXPANSION PLANS ARE BEING MADE OR UNDER WAY

On the basis of the outlook for expansion of steel consumption in line with economic progress, a number of expansion plans of the steel industry are being realised. In the background is the analysis toward quantitative maturation of steel production in developed steelmaking countries.

In developing countries, there are many cases where the steel industry as a basic industry was fostered as a state industry or under the protection of state policy, but the movement toward liberalisation of trade made protective fostering of the steel industry undesirable, which leads to the necessity of development and expansion of the steel industry, with full competitiveness.

It means **firstly** establishment of a compact and economic steel mill by employing innovatory new technology, and **secondly** construction of an integrated steel mill with optimal scale to meet expansion of the market. Structure of the steel industry is built combining these conflicting factors according to market size and product mix.

As for transplants from developed steelmaking countries, on the other hand, there are a number of cases where establishment of certain mills is done in down-stream fields according to the request of steel consuming industries which were also transferred from developed countries. In this case the projects are mostly for production of flat products.

SUMMARY OF PATTERNS OF CAPITAL INVESTMENT PLANS AND EXPANSION PLANS UNTIL 2000 IN ASEAN COUNTRIES, REPUBLIC OF KOREA AND CHINESE-TAIPEI (AS OF MIDYEAR 1996)

Republic of Korea

Ironmaking

The capacity will increase 5.90 million tons or 28 per cent from 21.40 million tons in 1994 to 27.30 million tons in 2000. POSCO is undertaking a construction project of No.5 blast furnace at Kwangyang Steel Works (operation scheduled to begin in 1998). In addition a Corex furnace is planned to begin operation at Pohang Steel Works (August 1995), followed by planned operation of the furnace at Hanpoo Works.

Steelmaking

The capacity in 2000 will be 51.90 million tons, 1.5 times that in 1994 (35.30 million tons). A large part of the increment is by electric furnaces and the EF is expected to account for more than 50 per cent of the total capacity in 2000. (The percentage in 1994 was 40 per cent.)

Rolling

The capacity will expand mainly in hot rolled flat products (plate and hot strip mills). (The capacity in 2000 will be 31.50 million tons, an increase of about 11 million tons as compared to 1994). Moreover, the capacity of cold rolled flat products will also be increased by about 6.50 million tons to 15.20 million tons.

Chinese-Taipei

Ironmaking

Reflecting constant shortage of capacity, a number of large projects of integrated steel works and new iron production projects adopting Corex process were announced. The blast furnace which will be commissioned in this century is the furnace built as N°4 by China Steel Co. only, but there are plans for large integrated steel works such as a 7.5 million-ton integrated steel mill at Yielon Steel and a 3 million-ton Kueiyu Works using Corex and DR process under a joint venture with CSC. (CSC N°4 BF will be put into operation in November).

Steelmaking

The capacity will be increased by 6 million tons to 18.10 million tons in 2000, 1.5 times that in 1994 (12.10 million tons).

Rolling

Hot rolling capacity is increased by about 5 million tons, both long and flat products, to 27.00 million tons in 2000. In the long product sector, big expansion is expected for H shape in addition to bars and wire rods. In the flat product sector, after 2001 when the above two steel mills are put into operation, Chinese-Taipei may become one of the largest producers of hot rolled flat products.

Thailand

Ironmaking

Although there are no ironmaking facilities at present, projects to build an integrated steel mill with blast furnaces and an integrated mill with DR process have been announced and the capacity in 2000 will be 5 million tons (including DR iron).

Steelmaking

The capacity will be increased considerably, from 2.30 million tons in 1994 to 8.60 million tons in 2000.

Rolling

As a result of growth of needs for flat products in line with fast progress of steel consuming industries, hot strip mill will be expanded by 2.80 million tons to 4.6 million tons in 2000.

As for cold rolling facilities, through joint venture mainly with Japanese companies, the capacity will be increased to 2.2 million tons in 2000.

Malaysia

Iron making

The existing facilities are DR plants owned by state-owned Perwaja Steel and Amsteel Mills, with capacity of 1.90 million tons in total. From now on, DR capacity will be expanded to 2.9 million tons in 2000.

Steelmaking

The expansion will all be by the electric furnace process and the capacity in 2000 will be 6.70 million tons, 2.7 times that in 1994 (2.50 million tons).

Rolling

The expansion is characterised by that of shape rolling mills which have capacity of only 70 000 tons now. But there is a project to produce hot rolled flat products through EF and thin slab CC, which has already been approved by the government. The existing cold rolling facilities are small scale and there are no plans for large expansion.

Indonesia

Ironmaking

The existing facilities are DR plant of Krakatau Steel only with capacity of 2.30 million tons and there are no plans to expand the capacity.

Steelmaking

More than a half of the existing capacity (6 million tons in 1994) is Krakatau Steel and the expansion up to 2000 is only 360 000 tons.

Rolling

The existing hot rolling capacity is 2.50 million tons, of which 2 million tons is of hot strip mills. It is said that Krakatau Steel decided to undertake a feasibility study on the construction of a sheet mill using EF and thin slab CC under a joint venture with POSCO.

Philippines

Ironmaking

There are no ironmaking facilities except very small blast furnaces. Though a construction plan for a Corex furnace was announced, it is still uncertain.

Steelmaking

There are a number of plans to build electric furnaces at new sites, but it takes much time to construct and improve infrastructures such as ports and electric power supply, and their realisation in this century, if any, is expected to be few.

Rolling

The existing hot rolled sheet capacity is 1.70 million tons and it will be increased by 1.10 million tons by 2000. The existing cold rolled sheet capacity will be expanded by 650 000 tons and the capacity in 2000 will be 1.50 million tons, 1.8 times that in 1994.

Singapore

Steelmaking

The EF integrated steel works, NATSTEEL LTD., planned a joint venture with CHAPARREL Corp. in U.S. to produce flat steel based on compact economic mill technology developed by CHAPARREL (initially a half million tons and finally 2 million tons), but in the first half of 1996 the plan was shelved due to poor outlook of government protection and management judgement. Generally speaking, Singapore takes a policy to establish a country with Mid-Tech and High-Tech Industry.

Note: The projects mentioned in the above contain uncertain factors and there may be cases where the plans are changed in a short time. They should be considered or showing a trend in plans.

CAPACITY EXPANSION PLANS IN ASIA BY 2000

(Unit: million ton)

	Current capacity (1994)	Capacity expansion (1995-2000)	Capacity as of year 2000
Iron making	31.00	14.00	45.00
Steel making	60.00	35.00	95.00
H.R. - Non-flat	41.50	17.50	59.00
H.R. - Flat	32.90	22.60	55.50
C.R. Sheet	15.70	11.00	26.70
Coated Sheet	9.00	4.00	13.00
Pipes	7.80	0.60	8.40

Source: Based on expansion plans announced.

- Notes:*
1. Countries covered are: Republic of Korea, Chinese-Taipei and ASEANs incl. Vietnam.
 2. Concerning Chinese-Taipei, there will be more capacity expansion plans than included above, especially in iron making (with blast furnace). Most of the said projects will be accomplished by 2002

JAPANESE STEEL INDUSTRY ON THE WAY OF RESTRUCTURING

Facing fast rising yen revaluation from the latter part of 1980s, the Japanese steel industry experienced a very severe period. This brought about a decrease of domestic shipment from steel companies due to a shift abroad of steel consuming industries and intensified competition with imported product and change in competitiveness of steel companies. As a result, the steel companies faced the necessity of drastic restructuring, which began at steel mills and extended broadly to management, affiliated groups and organisations. Progress of globalisation and liberalisation of trade caused broadening of market and progress of horizontal division of work and the Japanese economy is forced to undergo a change of industrial structure. Reasonable (potential) growth rate of Japanese economy is about 2 per cent, but from 2010 and after, it is expected to be below 2 per cent due to factors such as increase of aged population, slow growth and decrease of population. Capital investment by the steel industry is very little of capacity and mostly directed to environmental measures including energy saving and improvement of competitiveness through introduction of new technology. At the same time, its research and development investment is directed toward new coke ovens, smelting reduction process and new steelmaking methods including measures to cope with scrap of deteriorated quality. Multiple management business has already passed the first stage and is now being considered for final decision for management strategy. Crude steel production in 1995 was 101.64 million tons and in 1996 is expected to be 95.00 to 100.00 million tons.

Crude steel production is about 68 per cent by basic oxygen furnace and about 32 per cent by electric arc furnace and no production by open hearth furnace (1995). Using new technology, mini-mills entered into the market which was for integrated steel companies products in the past and the competition between mini-mills and blast furnace integrated steel mills intensified as in the case of competition with imported steel. In the case of major integrated steel companies, management strategy including steel production is a kind of yearly rolling plan with targets set 3 years ahead, which enables flexibility in coping with change in the business environment at home and abroad.

PROGRESS AND REGIONAL CO-OPERATION OF NEW ASIAN STEEL INDUSTRY

Steel consumption in Asia induced strong interest and approaches from various countries in the world as the economy in the region makes fast growth. In the past, assistance from many foreign countries to three big state steel companies in India led to construction of excess steel capacity then, and for a long period their operation showed very low operating rate as many development economists note.

Steel projects already under way or being planned will give birth to vast capacity in Asia, but it is not the object of this paper to study the meaning of the matter.

The idea taken up at the Asian Industrial Development Council (AIDC) of UN ECAFE in 1960s was harmonious industrial development in the region through regional co-operation.

With a history of 25 years, the South East Asia Iron And Steel Institute (SEAISI) provided steel companies in the member countries with steady results through various activities as a steel information centre in the region. In addition, Asean Iron And Steel Industry Federation (AISIF) was established as a regional industry club under the ASEAN Chamber of Commerce and Industry and shows business oriented behaviour of steel management people.

It is hoped that general interest will be given to the future movement of the Chinese steel industry and the idea of the activities of steel related international bodies (SEAISI and AISIF). For it can be a new stepping stone in understanding the steel industry in Asia.

It is not necessary to consider Asia as another market, but the spirit of co-operation and idea to improve living and create foundation of pleasant living in Asian countries.

Environment problem is the responsibility of all of us to challenge it as a task common to all races and people. The steel industry will continue to be an effective industry to supply basic materials. Its products will be improved day by day and the characteristics of steel as a material of superior functional or structural material is unchangeable and its market is expanding. It can be said that steel is an eternal industrial material for Asian countries and developed steelmaking countries.

EFFORTS FOR POSITIVE CONTRIBUTION TOWARD SOLVING EARTH ENVIRONMENT PROBLEM

Earth's environment problem is a global affair and Japanese industry is fully aware of the importance of problems of earth's environment such as global warming and holds technology of the highest level in the world to save energy and lighten environmental load through voluntary and active efforts. In the future as well, the industry will draw up voluntary action programs for environment protection and concurrently will continue the effort through improvement at technical level and technical

co-operation with other countries. In line with such aim, the steel industry is also making maximum efforts to cope with earth's environment problem. The Japanese government is also actively engaged in measures for environment problem through the "Green Aid Plan".

GREEN AID PLAN

The plan is provided by the Japanese government. The object is to assist developing countries working for energy and environmental measures. Through close discussion on policy and under mutual understanding, the government provides comprehensive international co-operation on energy and environment problems through co-operation on study, personnel training and research, and assists self-effort of China and developing countries such as ASEANs in coping with energy and environment problems.

JAPANESE GOVERNMENT BUDGET RELATED TO GREEN AID PLAN

Fiscal	(Unit: Yen million)	
	1994	1995
Gen. acct. ODA	2 238	2 663
Spe. acct.	11 766	12 188
Total	14 003	14 851

Major items of Green Aid Plan related to steel industry are as follows:

1. FY 1994: Study project on comprehensive development plan Assistance to China: Study on environment preservation (in energy field).
2. FY 1995: Study project on comprehensive development plan Assistance to China: Study on environment measures in Chinese steel industry (in environment field).
3. FY 1996: Research co-operation on environment technology to China: Technical measures to treat waste water from ironmaking.
4. Project of rationalisation model of energy use (NEDO):
 - Model projects in China
 - Recovery of waste heat from steel works
 - Coal moisture adjustment facility
 - Recovery of waste heat from hot stove of blast furnace
 - Power generation using top pressure of blast furnace.

ANNEX: TABLES

Table 1. **Economic Index of Eastern Asian Countries**

	Thailand	Malaysia	Indonesia	Philippines	Singapore	Vietnam	India	Myanmar	China	Chinese Taipei	Japan
Population (Million)	59.40 (Mid 94)	19.65 (Mid 94)	193.75 (Mid 94)	67.04 (Mid 95)	2.99 (Mid 95)	72.51 (Mid 94)	910.70 (Mar 95)	45.55 (Mid 94)	1 211.21 (Mid 95)	21.26 (Mid 95)	125.20 (Jul 95)
Real growth rate of GDP (%)	8.6	9.5	8.1	4.8	8.8	9.5	6.2	-	10.2	6.1	0.9
Per capita GDP (\$)	2 411	3 290	913	956	23 532	-	291	-	455	11 629	40 897
Apparent crude steel consumption (Million)	-	-	6.24	4.40	4.94	-	27.5	-	106.35	25.35	82.40
Elasticity to GDP	-	-	2.1	5.6	3.4	-	4.1	-	-	1.6	4.2
Per capita consumption (kg)	197.5	332.1	27.8	51.7	1 297 é	6.2	23.9	1.0	89.1	1 094.2	635.5
Exports (\$Million)	56 747	74 062	45 420	17 371	118 185	4 706 (94)	26 331	859 (94)	1 487.7	111 659	442 937
Imports (\$Million)	71 286	77 849	40 660	26 480	124 392	8 607 (94)	28 654	1 489(94)	1 320	103 550	336 094
Foreign currency reserve (\$Million)	36 945	23 069	14 787	7 775	68 293	876 (End of 94)	16 317 (End of Jan 96)	561	735.0 (Ex.gold)	90 310	182 820
Direct Investment received (approved) (\$Million)	5 874.9	4 320.8	23 724.3	2 338.1	2 833.2	3 700.0.0	4 061.0	-	33 766.5	1 630.7	4 155.0

Notes:

1. Foreign currency reserve includes gold.
2. Direct investment received in 1984. (Japan is fiscal.)
3. Per capita GDP is as of 1994 for all countries excepting Malaysia, India and China which are of 1993.
4. Per capita apparent crude steel consumption is as of 1994 for all countries.
5. Apparent crude steel consumption is estimated.

Source: Data published by governments, IMF, OECD, IISI, etc.

Table 2. **Development patterns and their features of steel industry in developing countries**

Developing stage	Pattern	Feature	Remarks	Actual examples	Reference
I	Import satisfies steel demand.	Import of finished steel products.	As the economy progresses, steel demand increases in quantity and kinds. Import acts as market study and when it reaches a level, it motivates home production.	Majority of developing countries up to a certain period after the Second World War and Guatemala, Honduras, Nicaragua, Costa Rica, Malaysia in 1950s.	H. Toda, Steel Industry in Asia, Institute of Developing economies, Mar. 1970, p. 25.
II-1	Import and partly home production satisfy demand.	Start of production of final (processed) products and rerollers lead to EAF & rolling mills.	Production begins of tinplate, G.I. sheet, small pipe, wire drawing, re-rolled bars (some flat bars) and progresses to EAF & rolling mills making mainly bars. Import of cold pig for EAF and pencil ingot for rolling begins. Also import of black sheet (for tinplate and G.I. sheet).	Nepal, Indonesia, Thailand, Philippines, Malaysia in 1960s.	Study report on Nepal's plan by UN ECAFE West Asia Steel Study Mission, Mar. 1970, etc.
II-2	Import and production of major steel products in demand (Full scale production of crude steel)	Time is ripe for selection of backward method or forward method for expansion of basic industry. If forward method, EAF, DR or B.F. based process to be selected. Primary object is substitution of import.	It is difficult to distinguish II-1 from II-2. Pattern varies according to demand level, forecasted growth and available domestic resources. At this stage, developed steelmaking countries begin competitive proposal for assistance and projects materialize and continue.	Indonesia, Philippines, Mexico, Venezuela in 1970 and Saudi Arabia from end of 1970s to early 1980.	Study report on project to construct an integrated steel mill in Philippines by Japanese Government (JICA), Feb. 1976. Study report on project of El Dikheila DR integrated steel mill by Japanese Government -(JICA), Aug. 1979.

Table 2. Development patterns and their features of steel industry in developing countries (cont'd)

Developing stage	Pattern	Feature	Remarks	Actual examples	Reference
III	Import and expansion of home production in kind and quantity, and start of pig iron sponge iron production.	Construction of integrated steel mills, its object changing from substitution of import to export (if iron & steel resources available at home). Basically to fill home demand and add value to home resources (Tubarao). One mil.t. (crude steel) demand forecasted in the near future.	By progress from II to III, selection of forward or backward method intensifies. Natural gas and other factors enable DR based steel mill. Generally success of construction depends on availability of favorable funds from abroad. Economic progress takes form seen in developed countries with takeoff period already behind.	S. Korea: Pohang Steel Taiwan: China Steel Brazil: 3 major state owned steel companies Venezuela: DR based steel mill Argentina: B. F. based steel mill Mexico: B. F. based steel mill.	Study report on project to construct an integrated steel mill in Indonesia by Japanese Government (JICA) (Krakatau Steel), 1974. Study report on overall development project for Carajas region, Brazil by Japanese Government (JICA) (pig iron & semis included), Sep. 1983.
IV	High grade products imported, but other grades are in full production with gradually moving to high grades.	Exports of steel products (include. semis) begins to the world market. Integrated steel mills with optimal capacity scale appear and home demand is mostly covered.	Expansion of integrated steel mills is now possible domestically and rate of domestic equipment rises considerably.	South Korea: Kwangyang project Taiwan: 3rd phase expansion of China Steel Co. Brazil: 3 major state steel companies and CST.	1st half to 2nd half of 1980s.

Table 2. Development patterns and their features of steel industry in developing countries (cont'd)

Developing stage	Pattern	Feature	Remarks	Actual examples	Reference
V	All grades of steel products produced as in developed steelmaking countries.	Full-fledged steel industry based on integrated steel mills. Competition likely from developing countries who are late comers in steel.	Technologically, much progress in catch-up with existing technologies, but problems facing developed steel-making countries (environmental, labor, and market export friction) appear and difficulty in export-dependent expansion, necessity of developing own technology. With progress of the economy, home demand diversifies and needs high quality. Export difficult to markets in developed countries as they become protective.	Most integrated steel mills in newly industrialised developing countries fall in this pattern. South Korea: Pohang & Kwangyang. China: Baoshan.	Intensifying competition among developing countries which already established steel industry (as Brazil, South Korea and Taiwan in US market). 2nd half of 1980s to 1990s.

1. The above historical development patterns show standard model patterns in the past, and some oil-producing with ample funds available directly enter into the stage of construction of an integrated steel mill based on DR process without going through the above stages.

Source: H. Toda, Steel Industry in Asia, 1970; Steel Industry in Latin America, 1972; Steel Industry in Africa, Aug. 1972, Institute of Developing Economies, and author's experience and results of interviews with local officials when he participated in study missions such as Southeast Asia Steel Study Mission and West Asia Steel Study Mission of UN ECAFE (now ESCAP) and various studies by the Japanese Government (JICA).

Table 3. **Automobile Production in Main ASEAN Nations**

In thousands of units manufactured

	2	1991	1992	1993	1994	1995
The Philippines	P	22	35	51	59	71
	B	20	25	33	45	53
	T	42	60	84	104	124
Malaysia	P	122	109	118	157	222
	B	60	36	31	33	58
	T	182	145	149	190	280
Thailand	P	67	122	172	148	160
	B	202	247	284	338	395
	T	269	369	456	486	555
Indonesia	P	46	30	33	42	44
	B	217	140	181	283	340
	T	263	170	214	325	384
Total above	P	257	296	374	406	497
	B	499	448	529	699	846
	T	756	744	903	1 105	1 343

1. Base on various sources in ASEAN.

2. P: Passenger cars, B: Cars for business-use, T: Total of P and B

3. Figures include KD sets.

Table 4. **Apparent crude steel consumption per capita by country**

(Unit: kg)

	1989	1990	1991	1992	1993	1994
UE (12)	380.7	381.7	358.6	346.1	295.3	344.7
France	312.8	318.6	290.9	280.5	238.2	277.4
Germany	560.7	562.2	488.5	480.0	386.7	468.0
Italy	485.1	492.6	468.5	455.3	378.1	450.8
UK	302.3	288.9	251.6	230.5	226.2	240.8
Other West. Europe	230.5	204.3	177.3	180.2	199.7	192.2
Eastern Europe	450.1	330.3	206.9	165.8	168.0	176.9
Former USSR	561.5	528.7	455.3	363.7	241.1	167.8
Russia	n.a.	n.a.	n.a.	397.2	267.6	183.5
N. America	305.4	297.4	265.0	278.7	291.1	330.8
USA	409.2	407.1	358.0	378.4	399.4	445.8
S. America	71.7	57.8	61.9	66.0	68.9	74.5
Brazil	88.6	70.4	67.2	68.5	72.4	84.1
Africa	28.5	26.9	26.5	25.6	24.3	24.2
Middle & Near East	94.0	86.1	84.7	102.8	100.2	66.3
Asia	85.8	89.3	92.2	91.5	108.3	103.7
Japan	757.6	801.6	800.1	676.0	646.4	635.5
Republic of Korea	490.3	501.0	602.4	532.3	606.2	724.1
Chinese Taipei	701.1	754.3	920.2	1 026.5	1 188.2	1 094.2
Indonesia	17.2	26.1	24.4	23.6	30.9	27.8
Malaysia	128.7	153.5	227.0	241.1	291.9	332.1
Philippines	40.5	37.7	34.0	42.2	47.7	51.7
Singapore	1 140.0	1 274.2	1 315.5	1 205.3	1 362.5	1 297.2
Thailand	72.2	95.9	127.2	151.6	139.8	197.5
China	61.7	59.4	60.6	72.5	108.2	98.1
Oceania	373.6	303.4	278.1	274.6	307.0	336.2
World Total	155.7	149.8	139.7	133.1	133.8	133.1

1. Per capita crude steel consumption = Production + Import - Export / Population.

2. Germany: Up to 1990, former West Germany only. From 1991, former west East Germany included.

Source: IISI "Steel Statistical Yearbook 1995".

Table 5. Production of rolled steels by kind in Japan (ordinary steel)

	1915		1925		1935		1955		1965		1975		1985		1994		1995	
	%		%		%		%		%		%		%		%		%	
Long products:																		
Rail	59	20.7	947	14.6	366	10.1	359	5.3	525	1.7	545	0.7	592	0.7	471	0.6	455	0.6
Sheet pile	-	-	-	-	-	-	23	0.3	366	1.2	990	1.3	819	1.0	819	1.1	869	1.1
Shapes	93	32.6	137	14.5	468	12.9	668	9.8	3 717	12.4	8 782	11.5	9 582	11.8	10 354	13.8	10 751	13.8
Bars	-	-	345	36.4	1 018	28.1	1 303	19.1	5 058	16.8	9 973	13.0	14 677	18.0	13 708	18.3	13 917	17.9
Wire rods	35	12.3	49	5.2	413	11.4	719	10.6	3 157	10.5	5 207	6.8	4 418	5.4	3 762	5.0	3 518	4.5
Total	187	65.6	669	70.6	2 265	62.4	3 303	45.1	12 823	42.7	25 497	33.3	30 088	37.0	29 114	38.9	29 511	37.9
Flat products:																		
Plate & light			207	21.9	713	19.6	1 682	24.7	5 700	19.1	16 322	21.3	9 807	12.0	7 406	9.9	8 137	10.4
pate							726	10.7	284	0.9	394	0.5	333	0.4	77	0.1	56	0.1
H.R. sheet							140	2.1	1 990	6.6	9 531	12.5	8 336	10.2	6 742	9.0	7 560	9.7
H.R. coils	87	30.5	29	3.1	389	10.7			128	0.4	141	0.2	148	0.2	227	0.3	238	0.3
C.R. hoop							90	1.3	1 339	4.5	7 559	9.9	9 526	11.7	7 733	10.3	8 396	10.8
C.R. coils							355	5.2	2 155	7.2	2 155	2.8	1 841	2.3	378	0.5	225	0.3
C.R. sheet																		
C.R. elect.																		
coils	-	-	-	-	-	-	48	0.7	254	0.8	638	0.8	1 254	1.5	1 649	2.2	1 981	2.5
Tinplate	-	-	6	0.6	95	2.0	182	2.7	876	2.9	1 559	2.0	1 564	1.9	1 711	2.3	1 695	2.2
Tinfree steel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 176	1.6	1 108	1.4
Galvanised																		
sheet	-	-	-	-	-	-	-	-	1 430	4.8	4 186	5.5	8 273	10.2	10 959	14.6	11 199	14.4
Other coated																		
sheets	-	-	-	-	-	-	-	-	-	-	595	0.8	1 866	2.3	899	1.2	906	1.2
Total	87	30.5	242	25.6	1 197	33.0	3 223	47.3	14 156	47.1	43 066	56.3	42 948	52.7	38 957	52.0	41 502	53.2
Pipe & tube	11	3.9	36	3.8	167	4.6	445	6.5	2 968	9.9	7 799	10.2	8 340	10.2	6 727	9.0	6 889	8.8
Tyres							70	1.0	86	0.3	153	0.2	52	0.1	48	0.1	54	0.1
Grand total	285	100.0	947	100.0	3 629	100.0	6 810	100.0	30 033	1000	76 515	100.0	81 428	100.0	74 846	100.0	77 955	100.0

1. As the economy progresses, its structure will change with manufacturing increasing its weight. Then, the weight of consumption will shift from bars and shapes to plate and sheet. This change occurred around 1955 when the percentage of flat products exceeded that of long products.

Source: Many statistics of the Japan Iron and Steel Federation, used by Toda as data for computation.

Table 6. Growth of steel production in major countries and years required to attain higher production level

(Production: Million tons)																				
(Mil.t)	Year when crude steel production reached the level of														Crude steel production		Years required to rise from left to right figures			
	1	5	10	15	20	25	30	40	50	60	70	80	90	100	(1995)	(1994)	1-10	10-50	50-80	80-100
Former USSR	1896	1930	1935	1936	1949	1950	1951	1954	1957	1960	1961	1963	1965	1968	78.8	78.2	39	22	6	5
China	1952	1957	1958	1967	1971	1973	1978	1983	1986	1989	1991	1992	1994	-	94.0	92.6	6	28	6	-
USA	1880	1892	1899	1902	1905	1910	1912	1916	1928	1940	1941	1943	1951	1953	93.6	91.2	19	29	15	10
Former West																				
UK	1879	1903	1935	1948	1955	1964	-	-	-	-	-	-	-	-	17.6	17.3	56	-	-	-
France	1896	1923	1952	1959	1968	1973	-	-	-	-	-	-	-	-	18.1	18.0	56	-	-	-
Japan	1924	1936	1956	1959	1960	1961	1963	1965	1967	1967	1969	1969	1970	1973	101.7	98.3	32	11	2	4
S. Korea	1973	1978	1981	1987	1989	1991	1993	-	-	-	-	-	-	-	36.7	33.7	8	-	-	-
Chinese Taipei	1975	1983	1991	-	-	-	-	-	-	-	-	-	-	-	11.6	11.6	16	-	-	-
Thailand	1994	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	1.5	-	-	-	-
Indonesia	1984	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	3.2	-	-	-	-
India	1940	1962	1977	1991	1995	-	-	-	-	-	-	-	-	-	20.2	19.3	37	-	-	-
Brazil	1953	1970	1977	1980	1985	1989	-	-	-	-	-	-	-	-	25.1	25.7	24	-	-	-

1. Prepared by the author based on various data.

Source: The 1994 and 1995 figures of former West Germany include former East Germany. As seen from the table, the years required to expand steel production in same ranges are shorter for later steelmaking countries.

Table 7. Large DC furnaces in operation in Japan

	Company	Works	Capacity t/charge	Startup of operation
1.	Tokyo Steel Co., Ltd.	Kyushu	130	Sep 1989
2.	Kyoei Steel Co., Ltd.	Headquarters	60	May 1990
3.	Daiwa Steel Co., Ltd.	Mizushima	100	Dec 1990
4.	Nakayama Steel Co., Ltd.	Funamachi	75	Apr 1991
5.	Kobe Steel Co., Ltd.	Takasago	30	Sep 1991
6.	Kansai Billet Center	Headquarters	120	Jan 1992
7.	Tokyo Steel Co., Ltd.	Okayama	150	Mar 1992
8.	Kyoei Steel Co., Ltd.	Nagoya	110	Oct 1992
9.	Nakayama Steel Co., Ltd.	Headquarters	70	Dec 1992
10.	Daiwa Steel Co., Ltd.	Mizushima	100	Dec 1993
11.	Mitsubishi Steel Co., Ltd.	New Muroran	100	Apr 1994
12.	Mitsubishi Metal Co., Ltd.	Tsubame	60	Apr 1994
13.	Takunan Steel Co., Ltd.	Okinawa	40	Nov 1994
14.	Toa-steel Co., Ltd.	Kashima	150	May 1995
15.	Sumitomo Metal Industries	Kansai	40	Jun 1995
16.	Tokyo Steel Co., Ltd.	Utsunomiya		1995
17.	Yamatokogyo Co., Ltd.	Headquarters	120	Mar 1996

Source: "Recent Technical Aspects in Japanese EAF Industry", September 1996.
 Electric Furnace Committee, The Joint Research Society
 The Iron and Steel Institute of Japan
 and based on various information from JISF.

Table 8. Some examples of gestation period in construction of B.F.-based integrated steel works

Country	Company	Name of works	Planned	Construction commenced (A)	Period completed (B)	Time needed (A) to (B)		Remarks
Republic of Korea	Pohang Iron & Steel Co. (POSCO)	Pohang Steel works	May '62	Apr 70 Dec '73 Aug '76 Jan '79 Sep 81	Jul. '73 May '76 Dec '78 Mar '81 May '83	3 yrs 2 yrs 2 yrs 2 yrs 1 yr	4 mths 6 mths 5 mths 2 mths 9 mths	Crude steel capacity: 1st phase 1.03 million tons 2nd phase 2.60 million tons 3rd phase 5.50 million tons 4th phase 8.50 million tons 4th phase 9.10 million tons
		Kwangyang	1980	Jul '85 (Planned)	Mar '88 (Target)	2 yrs 9 mths	9 mths	(Expansion) Site to be completed by mid-1985 (1st phase, 8 mil.m ² and finally 14.85 mil.m ²) 1st phase crude steel capacity: 2.70 mil.tons 4th phase to be completed in 1992
China	Baoshan Iron & Steel Directorate	Baoshan steel works (Shangai)	1977	Dec '78 (Ground breaking)	Sep '85 (Target) 1st phase	6 yrs	10 mths	Planned to be completed in 1982, but delayed due to economic readjustment 1st phase crude steel capacity: 3 mil.t.
Chinese Taipei	China Steel Co. (CSC)	Kaoshung steel works	1960s	Sep '74 Nov '77 Jul '84	Oct '77 Feb '82 Jun '88 (Target)	3 yrs 4 yrs 4 yrs	2 mths 4 mths	Crude steel capacity: 1st phase 1.5 million tons 1st phase 2nd stage 3.25 mil.t. 1st phase 3rd stage 5.65 mil.t.

Table 8. Some examples of gestation period in construction of B.F.-based integrated steel works (cont'd.)

Brazil	USIMINAS	Ipatinga steel works	Apr '56 (Co. formed)	Aug '58 Nov '62 Mar '74 Nov '76	Oct '62 Feb '74 Oct '76 Dec '80	5 yrs 10 yrs 2 yrs 4 yrs	3 mths 3 mths 7 mths 1 mths	1st phase 0.7 million tons 2nd phase 1.40 million tons 3rd phase 2.40 million tons 4th phase 3.50 million tons
	Companhia Siderurgica de Tubarao (CST)	Tubarao iron works	Early 1970s	Jun '80	Nov '83	3 yrs	5 mths	1st phase (Slab) 3 million tons (In crude steel) 3.4 million tons
Japan	Nippon Kokan (NKK)	Fukuyama steel works	1959 (announced as 4th works of NKK)	Apr '64 Sep '66 Mar '68 Dec '69 May '72	Aug '66 Feb '68 Jul '69 Apr '71 Oct '73	2 yrs 2 yrs 2 yrs 2 yrs 1 yr	4 mths 7 mths 1 mths 3 mths 7 mths	Steel works with the biggest capacity in the world Crude steel capacity: 1st phase 1.8 million tons 2nd phase 4.0 million tons 3rd phase 7.5 million tons 4th phase 12.0 million tons 5th phase 16.0 million tons

1. In all cases, original plans at the time of planning were shown and they do not include change of the plan in the course of implementation.

Source: Various data and information on construction of steel works in the world.

Table 9. Crude steel production in ASEAN, Republic of Korea and Chinese Taipei

(Unit: 1 000 t)

	Thailand	Malaysia	Indonesia	Philippines	Singapore	Total	Republic of Korea	Chinese Taipei
1984	381	350	1 171	250	362	2 514	13 034	4 934
1985	447	400	1 374	300	365	2 886	13 539	5 186
1990	685	1 100	2 892	600	489	5 766	23 125	9 748
1991	711	1 130	3 090	605	510	6 046	26 001	10 973
1992	929	1 559	2 949	497	482	6 416	28 055	10 705
1993	954	1 807	3 807	623	520	7 706	33 026	11 975
1994	1 461	2 046	3 220	473	530	7 730	33 745	11 594
1995	2 134	2 134	4 130	923	520	10 157	36 772	11 605
'95/'85	4.8	6.1	3.0	3.1	1.4	3.5	2.7	2.2

1. 1995 production of Singapore is estimate.

Source: IISI "Steel Statistical Yearbook"; SEAISI "Steel Statistical Yearbook", August 1996.

Table 10. Production of finished rolled steel products in 5 ASEAN countries

(Unit: 1 000 t)

	Long products		Flat products		Pipe & Tube	Total
		%		%	%	
1992	7 351	68.2	2 281	21.2	1 153	10 783
1993	8 416	66.6	2 903	23.0	1 314	12 633
1994	8 028	58.4	4 335	31.6	1 374	13 737
1995	10 242	56.2	5 405	29.7	2 582	18 229
'95/'94 (%)	127.6		124.7		188.0	132.7

1. The total is that of 5 ASEAN countries excluding Vietnam and Brunei.

Source: SEAISI "Steel Statistical Yearbook", August 1996.

Table 11. **Supply and demand of steel products (1994) in selected ASEAN countries**

(Unit: 1 000 tons)

	Production A	Imports B	Exports C	Apparent Consumption D=A+B-C	Self- sufficiency A/D %	Import ratio B/D %
Thailand	2 114	6 172	301	7 985	26.5	77.3
Malaysia	2 023	4 012	1 065	4 971	40.7	80.7
Indonesia	4 294	1 664	714	5 244	81.9	31.7
Philippines	1 568	954	65	2 456	63.8	38.8
Singapore	805	3 309	303	3 811	21.1	86.8
ASEAN (5) total	10 804	16 111	2 448	24 467	44.2	65.8
Korea	35 312	5 213	9 194	31 330	112.7	16.6
Chinese Taipei	17 128	5 076	2 674	19 166	89.4	26.5
Japan	91 645	5 199	20 541	76 302	76 302	6.8

1. Production figures are for hot-rolled products.

2. Apparent consumption of Chinese Taipei does not include hot-rolled strip imports (365 000 tons).

Source: SEASI, Steel Statistical Yearbook.

Table 12. Crude steel production in each 5-year plan period in China

(Unit: million tons)

	Year	Pig iron	Crude steel	Rolled steels	Remarks	
Max before liberalisation	1943	1.80	0.92	0.69		
Liberalisation	1949	0.25	1.58	0.14	People's Republic of China established	
Recovery period ('50-'52)	1950	0.98	0.61	0.41	Private trade pact made with Japan	
	1951	1.45	0.90	0.67		
	1952	1.93	1.35	1.13		
1st 5-year plan ('53-'57)	1953	2.23	1.77	1.51	USSR type economic planning implemented with emphasis on heavy industry	
	1954	3.11	2.23	1.80		
	1955	3.87	2.85	2.26		
	1956	4.83	4.47	3.27		
	1957	5.94	5.35	4.36		
2nd plan ('58-'62)	1958	13.69	8.00	6.20	Great move forward ('58-'60) Primitive ironmaking Readjustment period ('61-'65)	
	1959	21.91	13.87	9.35		
	1960	27.16	18.66	11.75		
	1961	12.81	8.70	6.58		
	1962	8.05	6.67	4.69		
Adjustment period ('63-'65)	1963	7.41	7.62	5.39		
	1964	9.02	9.64	6.97		
	1965	10.77	12.23	8.95		
3rd plan ('66-'70)	1966	13.34	15.32	10.51	Memorandum trade pact made with Japan	
	1967	9.63	10.29	7.40		
	1968	8.57	9.04	6.87		
	1969	12.80	13.33	9.56		
	1970	17.06	17.79	12.23		
4th plan ('66-'70)	1971	21.00	21.32	14.41	Entered UN Relation with Japan normalised	
	1972	23.55	23.38	15.61		
	1973	24.90	25.22	16.84		
	1974	20.62	21.12	14.67		
	1975	24.49	23.90	16.22		
5th plan ('76-'80)	1976	22.33	20.46	14.66	10-year economic development plan (76-85) "Prosperity line" declared at the 11th National Representative Congress Peace & Friendly Pact with Japan made	
	1977	25.05	23.74	16.33		
	1978	34.79	31.78	22.08		
	Agreement on construction of Baoshan works Four modernisations announced					
	1979	36.73	34.48	24.97		Economic Readjustment period (79-82)
	1980	38.02	37.12	27.16	First China-Japanese joint venture, Hitachi TV in Fujian	

Table 12. **Crude steel production in each 5-year plan period in China (cont'd.)**

(Unit: million tons)

	Year	Pig iron	Crude steel	Rolled steels	Remarks
6th plan ('81-'85)	1981	34.17	35.60	26.70	Economic recovery & high growth rate Agreement made on return of Hong Kong BF fired-in at Baoshang Works Shanghai
	1982	35.50	37.16	29.02	
	1983	37.38	40.02	30.72	
	1984	40.01	43.48	33.72	
	1985	43.84	46.79	36.93	
7th plan ('86-'90)	1986	50.64	52.20	40.58	China International Steel Investment Co. established iron production over 50 mil. tons reached GNP ¥1.92 trillion Highest inflation (18.5%) Investment protection pact with Japan
	1987	55.03	56.27	43.86	
	1988	57.04	59.43	46.89	
	1989	58.20	61.59	48.59	
	1990	62.37	66.35	51.53	
8th plan ('91-'95)	1991	64.28	71.00	56.38	Macro-control policy
	1992	75.89	80.93	66.94	
	1993	87.38	89.54	77.07	
	1994	97.41	92.62	84.28	
	1995	101.00	94.00	80.00	
9th plan ('96-'2000)	1996		97.30		Assumed by Toda
	1997		100.00		
	1998				
	1999				
	2000				

1. Prepared based on "China Industry Yearbook" 1995 and other various data. China became the top pig iron producer in 1993.

2. Parties related to China Metallurgical Industry announced a forecast that Chinese population will reach 1.6 billion in 2030 and then the growth will stop (as of July 1996).

Source: Hiromoto Toda co-authored "Chino-Japanese Economic Exchange 1995" revised by Chino-Japanese Economic Association.

Table 13. **Pig iron production in Japan**

(Unit: 1 000 metric ton)

Year	Blast furnace	Electric furnace	Other furnace	Total	For steel making	For foundry
1985	80 467	33	70	80 569	79 578	991
1986	74 575	24	52	74 651	73 821	830
1987	73 352	21	45	73 418	72 591	827
1988	79 221	19	55	79 295	78 398	897
1989	80 121	18	58	80 197	79 177	1 020
1990	80 145	17	67	80 229	79 124	1 105
1991	79 909	9	67	79 985	78 776	1 209
1992	73 086	6	52	73 144	72 412	732
1993	73 686	4	48	73 144	73 041	697
1994	73 732	6	38	73 776	72 858	918
1995	74 888	11	6	74 905	74 098	807

Source: JISF.

Table 14. **Crude steel production in Japan**

(Unit: 1 000 metric tons)

Year	BOF	EF	Total	For rolling	For forging	For casting	Semis
1985	74 776	30 503	105 279	103 708	684	886	81 042
1986	69 117	29 158	98 275	97 052	511	711	77 471
1987	69 145	29 368	98 513	97 392	478	643	77 904
1988	74 248	31 433	105 681	104 420	543	718	812 857
1989	74 248	33 034	107 908	106 574	587	747	86 003
1990	75 640	34 699	110 339	108 899	649	791	87 869
1991	75 217	34 432	109 649	108 283	631	735	86 975
1992	67 144	30 988	98 132	96 942	576	614	78 437
1993	68 494	31 129	99 623	98 494	560	569	79 851
1994	67 224	31 070	98 295	97 127	588	580	78 189
1995	68 842	32 798	101 640	100 418	628	594	80 399

Table 15. **Apparent steel consumption in Japan**

(Crude steel equivalent)

(Unit: 1 000 metric ton)

Year	Production	Import	Export	Apparent steel consumption	Per capita ASC (kg)
1985	105 279	3 066	34 967	73 377	606
1986	98 275	3 497	31 831	69 941	575
1987	98 513	5 268	28 030	75 751	620
1988	105 681	7 302	26 112	86 871	708
1989	107 908	7 699	22 330	93 277	757
1990	110 339	7 555	18 862	99 032	801
1991	109 649	9 526	20 024	99 151	799
1992	98 132	6 575	20 667	84 040	675
1993	99 623	6 497	25 527	80 593	645
1994	98 295	6 084	25 046	79 333	634
1995	101 640	7 536	24 838	84 338	...

Source: The Iron and Steel Institute of Japan.

Table 16. Demand and supply of crude steel in Japan

(Unit: Million ton)

Fiscal year	Production of crude steel (A)	Import (B)	Export (C)	Domestic ASC (A+B-C)	Remarks	
1973	120.0	(17.0)	0.2	30.9 (3.9)	89.3 (13.1)	1st oil shock
1975	101.6	(-12.4)	0.1	36.0 (-3.5)	65.7 (-9.0)	
1979	113.0	(7.9)	1.4	35.0 (-0.4)	79.4 (8.9)	2nd oil shock
1980	107.4	(-5.6)	1.3	32.8 (-2.2)	75.9 (-3.5)	
1982	96.3	(-6.7)	2.1	32.1 (-0.5)	66.3 (-6.1)	
1983	100.2	(3.9)	3.6	35.4 (3.3)	68.4 (2.1)	
1984	106.5	(6.3)	3.5	35.7 (-0.3)	74.3 (5.9)	Rise of exchange rate of yen
1985	103.8	(-2.7)	3.5	33.7 (2.0)	73.6 (-0.7)	
1986	96.4	(-7.4)	3.6	31.5 (-2.2)	68.5 (-5.1)	
1987	101.9	(5.5)	6.1	27.4 (-4.4)	80.6 (12.1)	
1988	105.7	(3.8)	6.8	25.6 (-1.8)	86.8 (6.2)	Economic bubble
1989	108.1	(2.4)	8.0	21.0 (-4.6)	95.2 (8.4)	
1990	111.7	(3.6)	7.9	19.2 (1.8)	100.5 (5.3)	
1991	105.9	(-8.5)	8.9	20.1 (0.9)	94.7 (-5.8)	Bubble subdued
1992	98.9	(-7.0)	6.7	21.1 (1.0)	84.5 (-10.2)	Stronger yen
1993	97.1	(-1.8)	6.3	26.1 (5.0)	77.3 (-7.2)	Yen still rising
1994	101.4	(4.3)	6.6	25.2 (0.9)	82.7 (5.4)	-"-
1995	100.0	(-1.4)	7.1	24.2 (-1.0)	82.9 (0.2)	-"- Hanshin quake
Ref.	Calendar year					
1993	99.6	(1.5)	6.5	25.5 (4.9)	80.6 (-3.5)	
1994	98.3	(-1.3)	6.1	25.1 (-0.5)	79.3 (-1.3)	
1995	101.6	(3.3)	7.5	24.8 (-0.3)	84.3 (5.0)	

1. Parentheses show changes from previous year.

2. Import, export and ASC are crude steel equivalent.

3. ASC = Domestic apparent steel consumption
= Production + Import (crude steel equivalent)
- Export (crude steel equivalent)

The figures of domestic ASC are those rounded and in some years they may differ from those computed by this formula.

4. Crude steel production in fiscal 1973 was the highest in history.

Source: MITI "Monthly Iron and Steel Statistics" & JISF.

Table 17. **Supply of Fe source in Japan**

Fiscal year	Supply of Fe scrap						Pig iron import	Total of FE			Total of Fe source		Export of Fe scrap	Domestic scrap generated	
	Domestic purchase		Home scrap		Import			Total		import				C+D	
	A	%	%	B	C	%	D	B+D	%	C+D	%	E	A+E	%	
1985	31.14	2	11.85	-3	3.17	46.16	0	0.72	3.89	-6	46.88	0	0.52	31.66	-1
1990	37.73	5	13.47	5	0.79	51.99	5	3.72	4.51	43	55.71	8	0.38	38.11	20
1991	35.51	-6	13.33	-1	0.51	49.35	-5	2.87	3.38	-25	52.22	-6	0.58	36.09	-5
1992	33.66	-5	12.57	-6	0.45	46.68	-5	1.45	1.90	-44	48.13	-8	1.78	35.44	-2
1993	32.49	-3	12.28	-2	0.68	45.45	-3	1.50	2.18	15	46.95	-2	1.09	33.58	-5
1994	34.21	5	12.58	2	1.13	47.92	5	2.20	3.33	53	50.12	7	0.83	35.04	4
1995	34.22	0	12.31	-2	0.72	47.25	-1	2.47	3.18	-4	49.71	-1	1.28	35.50	1

1. % shows % changes from preceding year.

Consumption of Fe scrap in 1994 fiscal year was 44.61 million tons, of which 31.37 mil.t. was for electric furnace, 6.30 mil.t. for basic oxygen furnace and 6.94 for foundry.

The consumption in 1995 fiscal year was 43.19 mil.t., of which 31.29 mil.t. was for electric furnace, 5.15 mil.t. for basic oxygen furnace and 6.75 mil.t. for foundry.

Source: MITI "Monthly Iron and Steel Statistics"; MOF "Trade Customs Statistics".

Table 18. Percentage of steel business and export ratio
of major steel companies in Japan

(Unit: ¥Million, %)

Company name	Fiscal year	Sales			Export	Export Ratio
		Total	Steel division	% of steel division		
Nippon Steel	1991	2 629 398	2 258 522	85.9	536 455	20.4
	1992	2 368 853	1 970 824	83.2	547 843	23.1
	1993	2 158 779	1 741 058	80.7	469 386	21.7
	1994	2 090 580	1 796 663	81.6	436 010	20.9
	1995	2 099 750	1 745 666	83.1	484 921	23.1
NKK	1991	1 314 817	977 805	74.4	263 488	20.0
	1992	1 262 656	865 598	68.6	212 034	16.8
	1993	1 203 948	760 346	63.2	244 053	20.3
	1994	1 171 879	733 903	62.6	230 589	19.7
	1995	1 159 742	739 875	63.8	239 471	20.6
Kawasaki Steel	1991	1 208 067	926 000	76.7	252 970	20.9
	1992	1 092 0991	822 673	75.3	235 855	21.6
	1993	1 005 316	715 119	71.1	225 017	22.4
	1994	946 716	687 912	72.7	249 114	26.3
	1995	928 444	706 088	76.1	242 198	26.2
Sumitomo Metal	1991	1 157 048	990 776	85.6	259 675	22.4
	1992	1 108 557	907 344	81.8	231 144	20.9
	1993	1 042 632	857 385	82.2	229 735	22.0
	1994	1 011 527	843 088	83.3	214 615	21.2
	1995	1 056 982	843 612	79.8	242 198	22.9
Kobe Steel	1991	1 301 207	630 414	48.4	213 799	16.4
	1992	1 177 290	558 503	47.4	199 033	16.9
	1993	1 068 158	516 347	48.3	200 185	18.7
	1994	1 065 587	477 463	44.8	189 295	17.8
	1995	1 146 356	499 949	43.6	196 423	17.1
Total of 5 firms	1991	7 610 537	5 783 517	76.0	1 526 387	20.1
	1992	7 009 455	5 124 942	73.1	1 425 909	20.3
	1993	6 478 833	4 590 255	70.9	1 368 376	21.1
	1994	6 286 289	4 443 757	70.7	1 319 624	21.0
	1995	6 391 274	4 535 190	71.0	1 406 409	22.0
Nisshin Steel	1991	431 778	431 788	100.0	52 443	12.1
	1992	399 060	399 060	100.0	49 877	12.5
	1993	373 846	373 846	100.0	43 614	11.6
	1994	370 582	370 582	100.0	61 336	13.7
	1995	383 601	383 601	100.0		16.0
Total of 6 firms	1991	8 042 315	6 125 295	77.3	1 578 830	19.6
	1992	7 408 515	5 524 002	74.6	1 475 786	19.9
	1993	6 852 679	4 964 101	72.4	1 411 691	20.6
	1994	6 656 871	4 814 339	72.3	1 370 238	20.6
	1995	6 774 875	4 918 791	72.6	1 467 745	21.7

1. Sales of steel division of 5 companies means that of the following department or kinds of products:

NSC - Pig iron, steel ingot, rolled steels

NKK - steel division

Kawasaki - iron & steel products

Sumitomo - steel division

Kobe - Iron & steel and electrode department.

Source: Securities Reports

Table 19. Object of diversification of five major steel companies in Japan

As of September 1966

Name of company	Name of Plan	Target year	Outline of diversification in management plan	Sales target	
				Medium-range	Long-range
Nippon Steel	The 3rd medium-range management plan (FY1994-196) Planned Apr. '94)	1996	Expansion and increase of profit at engineering business and EI business, expansion and assurance of profit of new material business such as silicon wafer, secure start-up of LSI business and development of high value-added products	-	-
NKK	New Future Vision (NFV) (Planned '88, revised May'92)	2000	Promotion of formation of business style, system and culture in line with characteristics of new business to be developed and making it self-support (Steel 50%, Engineering 12% and New & Common business 17%)	-	CY 2000 ¥1.6 trillion (50%) (NFV '88)
	Medium-range Management plan (Planned Mar. '93 revised Mar. '94)	1995	Promotion of restructuring for "self-support" of new businesses (City development, electronics & electronic device materials) (Steel 57%, Engineering 26% and new & common business 17%)		
Kawasaki Steel	2000 Vision (Planned Jan. '85)	2000	All-out efforts in new business mainly in electronics and new materials (Steel 62%, Engineering 12%, Chemical & new materials 9% and electronics 15%)	FY 1998 ¥1.46 tril. (Group total)	FY 2000 ¥2 tril. (62%) (2000 vision '85)
	The 2nd 5-year plan (Planned Apr. '93 revised Mar. '94)	1996	Steady progress in existing businesses in Engineering & Chemicals. Emphasis on LSI business in new business efforts	¥930 billion (Kawasaki Steel only)	
	New medium-range management plan (FY1996-98) (Planned May '96)	1998	Emphasis on structural materials, engineering, bridges & steel structures, chemicals and LSI for expansion of business Expansion of business through group companies in fields of distribution & information, inorganic materials	(New medium-range plan '96)	
Sumitomo	2000 Vision (Planned Jan. '90)	2000	Realisation of early profit of diversified departments through active investment of resources in diversified businesses (Sales in 1995 of non-steel departments composed by steel engineering 30%, electronics & information service 30% and others 40%)	-	-
	New medium-range management plan (FY1995-97) (Planned Jan. '96)	1997	Expansion of engineering business of construction & plant with present business in center Active expansion of new business in system engineering, electronics, new materials and biochemical		
Kobe Steel	Target 2000 (Planned Dec. '91)	2000	Formation of four main lines with sales over ¥500 billion each (Steel & welding rod 29%, aluminum & copper 21%, machine and tool 30% and electronics & information 9%)	FY '95 '96 ¥1.2 trillion ('95 '96 plan)	FY 2000 ¥2.4 trillion (Target 2000 '91)
	'95-'97 management (Planned May '95)	1997	For early recovery from damages of earthquake, the final year of "Medium-range Rolling Plan" to be made the 1st year of the 3-year plan to '97. Loss carried over to be solved by end of FY '96 and dividends paid in '97. Cost reduction of ¥172 billion in '93-97 (¥72 bil. added to Rolling Plan)		

1. Sales to include those of affiliated companies.
Sales of Kawasaki Steel group in FY 1998 does not include Kawasaki Steel Trade Co., whose sales in FY '98 is planned to be ¥1.4 trillion.

Table 20. Survey of the short range outlook in Japan

Project Reports

a) Refurbishment/upgrades

Company	Location	Summary description of the project	Term of construction	Total investment	Capacity
Nippon Steel Corporation	Hikari Works	Twin drum stripcasting machine	1996. 1 - 1997. 9	11 billion yen	-
Sumitomo Metal Industries, Ltd.	Wakayama Works	Seamless pipeline (Renewal)	1993. 4 - 1997. 2	80 billion yen	500 thousand tpy
Sumitomo Metal Industries, Ltd.	Wakayama Works	Steelmaking shop (Replace)	1996. 4 - 1999. 7	50 billion yen	3 400 thousand tpy
Kobe Steel, Ltd.	Kakogawa Works	No. 3 BF relining	1996. 4 *	20.5 billion yen	* Blowing off
Nippon Metal Industry Co. Ltd.	Kinuura Works	Hot strip mill (Integration of rolling mills)	1994. 12 - 1997. 4	27 billion yen	540 thousand tpy
Osaka Steel Co. Ltd.	Head office Works	Medium Shapes rolling mill (Replace)	1997. 2 - 1998. 3	10 billion yen	

b) New capacity

Company	Location	Summary description of the project	Term of construction	Total investment	Capacity
Tokyo Steel Co. Ltd.	Okayama Works	New cold-rolling and coating line	1995. 4 - 1997. 2	10 billion yen	Cold-rolling 300 thous. tpy coating 300 thous. tpy

Source: Press releases for the six blast furnace operators, annual reports for the year ended March 1996 for others.

Table 21. **Iron and steel making facilities in Japan**

		1993 ^{2/}	1994 ^{2/}	1995 ^{2/}	May 96	June 96	July 96
Ironmaking Total		95 645 390	95 531 850	95 531 850	95 531 850	95 531 850	95 531 850
Blast furnaces	Units	44	42	42	42	42	42
	Capacity	97 368 410	94 900 330	95 279 370	95 279 379	95 279 370	95 279 370
Electric arc furnaces	Units	1	3	3	3	3	3
	Capacity	8 800	21 980	21 980	21 980	21 980	21 980
Other furnaces	Units	2	2	2	2	2	2
	Capacity	268 180	230 500	230 500	230 500	230 500	230 500
Steelmaking total		137 949 960	149 828 190	149 828 190	149 554 380	149 554 380	149 554 380
Basic oxygen converters	Units	71	69	69	69	69	69
	Capacity	106 324 890	97 202 730	97 202 730	97 202 730	97 202 730	97 202 730
Electric arc furnaces	Units	474	479	474	474	474	474
	Capacity	31 625 070	52 625 460	52 351 650	52 351 650	52 351 650	52 351 650
Continuous casters	Units	150	152	150	150	150	150
	Capacity	93 102 000	113 284 200	112 394 100	112 394 100	112 394 100	113 905 200

1. The figures are for designated capacities, and do not take into account such factors which might affect calculating capacities as raw materials and balances every production stage.

2. End of period.

3. Not including capacities of BF's which are scheduled to be closed.

4. Real steelmaking capacity is estimated to be about 110 million tpy by Dr. Toda.

Source: Ministry of International Trade and Industry (Japan), "Iron and Steel Statistics Monthly".

**Table 22. Development of major overseas joint-ventures
by the Japanese steel industry (after 1989)**

Japanese steelmakers and joint ventures	Date of tie-up or JV establishment	Equity ownership by Japanese steelmakers (%)	Main lines of business
Nippon Steel Corporation			
- I/N Kote (US)	Sept. 89	50	Automotive coated sheets
- Inland Steel Industries, Ind. (US)	Dec. 89	13.4	Integrated iron and steel production, steel service center
- New CF&I Inc. (US)	July 94	10.0	Rails (holding company)
- Siam Tinplate Co., Ltd (Thailand)	Feb. 90	10	Tinplate and tin-free steel
- Thainox Steel Limited (Thailand)	Apr. 93	2.3	Cold-rolled stainless steel sheets
- Guangzhou Pacific Tinplate Co., Ltd. (China)	Dec. 94	25.0	Tinplate
- Nantong Baogang & Nippon Steel Co., Ltd. (China)	Dec. 94	20.0	Bars, semi-finished products
NKK Corporation			
- DNN Galvanizing Corp. (Canada)	Sept. 90	40	Automotive hot-dip galvanised sheets
- National Steel Corp. (US)	June 90	50 ('84)→68 ('95)	Integrated iron and steel production
- NKK-United Inc. (US)	Aug. 92	60	Steel engineering
- Thai Coated Steel Sheet Co., Ltd. (Thailand)	Mar. 90	20 ('90)→26 ('92)	Electrogalvanized sheets
- Beijing Phoenix Steel Metallurgical Engineering Co., Ltd. (China)	June 94	70	Steel engineering
Kawasaki Steel Corporation			
- AK Steel (US)	May 89	50 ('89)→20 ('94)	Integrated iron and steel production (company name was changed)
- Kawasaki L.N.P. (US°)	Nov. 91	100	Resin compounds
Sumitomo Metal Industries, Ltd.			
- L-S II Electro-Galvanizing Co. (US)	May 89	(50)	Automotive coated sheets
- International Crankshaft Inc. (US)	Feb. 90	80.1	Automotive forged crankshafts
- Bio Magnetic Technology (US)	Feb. 90	13	Medical equipment
- Pennsylvania Extruded Tube Co. (US)	May 92	(30)	Hot-rolled seamless pipe, material pipe for cold forming
- LTV Steel Corp. (US)	Jun. 93	10	Integrated iron and steel production
- Trico Steel Co., Ltd (US)	Dec. 94 (informally)	25	Hot-rolled sheets (annual production of 2 million metric tons, operation start-up slated for the second half of 1996, joint venture with British Steel and LTV)
			Engineering for design of continuous billet casters
- Chongqing Si You Continuous Casting Machine Technical Engineering Co., Ltd. (China)	Feb. 90	22	Structural pipe
- Thai Steel Pipe Industry (Thailand)	July 94	50 (expanded in 1990s)	Service center exclusively for electrical steel sheets
- Thai Sumitox Co., Ltd (Thailand)	Apr. 90	40	

**Table 22. Development of major overseas joint-ventures
by the Japanese steel industry (after 1989) (cont'd.)**

Kobe Steel, Ltd.				
– USS/Kobe Steel Co. (US)	July 89	50		Automotive high-grade bars, seamless pipe
– PRO-TEC Coaling Company (US)	Mar. 90	50		Automotive hot-dip galvanized sheets
– Komag Material Technology Inc. (US)	Mar. 89	45		Computer data storage devices
– Kobelco Stewart Bolling (US)	July 89	100		Tire-rubber machines
– Alcoa Kobe Transportation Products Inc. (US)	June 92	50		Flat-rolled aluminum products for transportation machinery
– Operaciones al Sur del Orinoco C.A. (Venezuela)	Jan. 90	51		Direct reduced iron
– Operacion Plant de Pellas OPP C.A. (Venezuela)	Oct. 94	100		Operation guidance for pelletizing plants
– Kobe Precision technology (Malaysia)	Feb. 90	100		Aluminum computer disk substrate
Nisshin Steel Co. Ltd.				
– Tubificio Di Terni S.R.L. (Italy)	June 92	10 ('92) →3 ('93)		Stainless steel pipe
– Wheeling-Nisshin Inc. (US)	June 84	80 ('91) →64 ('93)		Coatd sheets
– Thainox Steel Limited (Thailand)	Apr. 93	2.3		Cold-rolled stainless steel sheets
Daido Steel Co., Ltd.				
– Rotary Drilling Tools Mfg. Pte. Ltd. (Singapore)	May 89	29		Drill collars
– UEDA PRECISION (Singapore)	Apr. 90	9		Plastic molds
– Astra International (Indonesia)	Jan. 94	26		Coated sheets
– Daido Electronics (Thailand)	June 94	85		Cold-rolled stainless steel sheets
Hitachi Metals, Ltd.				
– Ward Manufacturing Inc. (US)	Dec. 89	100		Piping, joints, automotive cast parts
– Hitachi Metals North Carolina, Ltd. (US)	Dec. 89	100		Ferrite magnets for motors
Sanyo Special Steel Co. Ltd.				
– SKJ Metal (Thailand)	July 90	33		Cold-finished stainless steel bars
Mitsubishi Steel Mfg. Co., Ltd.				
– Rissoco US	Dec. 91	43		Springs exclusively used for automobiles
Yamato Kogyo Co., Ltd.				
– Siam Yamato Steel Co. Ltd. (Thailand)	Apr. 92	33		Integrated wide-flange beam production employing electric furnaces
Kyoei Steel Ltd.				
– Florida steel Corp. (US)	Dec. 92	100		Integrated bar production employing electric furnaces
– Vina Kyoei Steel Ltd. (Vietnam)	Dec. 93	45		Wire rods, reinforcing bars
Toyo Steel Mfg. Co., Ltd.				
– Shenyang Toyo Steel Co., Ltd. (China)	July 93	60		Billets, reinforcing bars

1. Percentage of equity ownership by NKK in National Steel: percentage of voting rights: 68%.

2. Kawasaki Steel stated in August 1995 its intended partial sale (4%) of total equity ownership (2% of paid-in capital) in AK Stel.

3. The percentage of equity ownership in parenthesis indicates that held by affiliated companies.

4. Data as of August 1995.

Source: Prepared from various materials available.

**ANNEX II: SUMMARY TABLES ON ASEAN STEEL INDUSTRY
1995 (CALENDER YEAR)**

PRODUCTION (Year: 1995)

(Unit: Metric Tonnes)

Item	Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Taiwan	Australia	Rep. of Korea	Japan	Vietnam	
(1) Pig iron, Ferro-alloys, Crude Steel												
1. Pig Iron/DRI/HBI		1 708 565	1 178 000	--	--	--	6 055 609	7 474 657	22 343 811	74 904 502	20 869	
2. Ferro-alloys		--	--	25 600	--	--	15 347	--	219 281	989 832	1 876	
3. Crude Steel Total (31-33) or (34-36)		4 130 158	2 450 000	923 300	768 580	2 134 189	11 605 285	8 460 480	36 771 642	101 639 573	271 204	
31 Ingots		--	--	30 000	--	5 373	44 738	52 920	537 266	3 671 812	154 520	
32 Continuous Cast		4 130 158	2 450 000	621 500	768 580	2 128 816	11 549 136	8 398 855	36 091 886	97 374 059	116 480	
33 Steel for Casting		--	--	271 800	--	--	11 411	8 705	142 490	593 702	204	
34 by Oxygen - blown Converters	N.A.	--	--	--	--	--	6 142 349	7 475 648	22 872 449	68 841 845	--	
35 by Electric Furnace		4 130 158	2 450 000	651 500	768 580	2 134 189	5 461 275	984 832	13 899 193	32 797 728	271 204	
36 by Other Furnace		--	--	271 800	--	--	1 661	--	--	--	--	
(2) Hot-Rolled Steel Products												
401 Rails & Accessories	N.A.	--	--	--	--	--	1 326	61 897	134 196	454 805	--	
402 Steel Sheet Piles	--	--	--	--	--	--	N.A.	--	179 331	802 156	--	
403 Sections	423 684	215 000	144 000	} 741 535		491 979	1 111 440	541 743	2 872 500	9 607 022	58 546	
404 Bars	1 694 738	2 176 000	1 066 000			1 431 375	8 220 514	1 065 283	10 788 696	19 271 671	194 573	
405 Wire Rods	696 289	680 000	75 000	}		325 867	1 271 959	663 133	2 044 420	6 820 458	164 828	
406 Round for Tubes	N.A.	--	--			--	N.A.	--	--	2 338 692	--	
407 Plates	412 161	--	16 800	--		106 275	1 033 000	365 888	3 699 242	9 988 499	--	
408 Hot-Rolled Sheets & Strips	1 606 885	--	785 300	--		1 131 233	5 484 184	3 924 794	17 780 860	46 282 816	--	
409 Tyres & Wheels	N.A.	--	--	--		--	N.A.	28 780	12 408	54 078	--	
<i>Total (401-409)</i>		<i>4 833 757</i>	<i>3 071 000</i>	<i>2 087 100</i>		<i>741 535</i>	<i>3 486 729</i>	<i>17 122 423</i>	<i>6 651 518</i>	<i>37 511 653</i>	<i>95 620 197</i>	<i>417 947</i>

PRODUCTION (Year: 1995) (cont'd)

(Unit: Metric Tonnes)

Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Taiwan	Australia	Rep. of Korea	Japan	Vietnam
Item										
(3) Cold-Rolled, Coated, Pipes, Tubes, Cold-formed Sections										
410 Cold-rolled Sheets&Strip	763 120	230 000	513 000	--	--	3 835 690	1 495 600	4 997 632	25 911 692	--
411 Cold-rolled Electrical Sheets	--	139 520	--	--	--	192 000	22 500	283 827	1 980 623	--
412 Galvanised Sheets	458 017	279 350	404 800	--	369 822	1 248 000	551 400	2 362 730	11 703 955	46 441
413 Tinplates	131 318	185 930	126 700	--	271 148	224 053	605 830	571 817	1 694 576	--
414 Other Metallic-coated Sheets	N.A.	--	N.A.	--	132 170	417 000	710 400	987 942	2 013 820	--
415 Pipes & Tubes	547 159	502 780	166 000	16 133	1 350 000	959 843	--	3 696 446	10 115 741	12 600
416 Cold-formed Sheet Piles	--	N.A.	N.A.	--	--	N.A.	--	--	66 987	--
417 Cold-formed Sections	20 192	N.A.	60 000	--	--	N.A.	91 880	229 986	1 390 091	--
(4) Finished Steel products										
Rails & Accessories	N.A.	--	--	--	--	1 326	61 897	134 196	454 805	--
Steel Sheet piles *1)	--	--	--	--	--	N.A.	--	179 331	869 143	--
Sections *2)	443 876	215 000	204 000	} 741 535	491 979	1 111 440	633 623	3 102 486	10 997 113	58 546
Bars	1 694 738	2 176 000	1 066 000		1 431 375	8 220 514	1 065 283	10 788 696	19 271 671	194 573
Wire Rods	696 289	680 000	75 000	}	325 867	1 271 959	663 133	2 044 420	6 820 458	164 828
Plates	412 161	--	16 800		--	106 275	1 033 000	365 888	3 560 314	9 190 919
Hot-rolled Sheets & Strips	470 342	--	132 200	--	1 131 233	1 093 663	3 924 794	5 919 091	9 245 898	--
Tyres & Wheels	N.A.	--	--	--	--	N.A.	28 780	12 408	54 078	--
Cold-rolled Sheets & Strips	336 320	230 000	126 200	--	--	2 000 737	1 495 600	4 997 632	11 158 414	--
Cold-rolled Electrical Sheets	--	139 520	--	--	--	192 000	22 500	283 827	1 980 623	--
Galvanised Sheets	458 017	279 350	349 800	--	369 822	831 000	551 400	2 362 730	11 199 221	46 441
Tinplates	131 318	185 930	126 700	--	271 148	224 053	605 830	571 817	1 694 576	--
Other Metallic-coated Sheets	N.A.	--	N.A.	--	132 170	417 000	710 400	987 942	2 013 820	--
Pipes & Tubes	547 159	502 780	166 000	16 133	1 350 000	959 843	--	3 696 446	8 628 505	12 600
<i>Finished Steel Products Total</i>	<i>5 190 220</i>	<i>4 408 580</i>	<i>2 262 700</i>	<i>757 668</i>	<i>5 609 869</i>	<i>17 356 535</i>	<i>10 129 128</i>	<i>38 641 336</i>	<i>93 579 244</i>	<i>476 988</i>

*1) Includes Cold-formed Sheet Piles

*2) Includes Cold-formed Sections

Source: Annual Statistical Year Book 1995, South East Asia Iron and Steel Institute (SEAISI).

CONSUMPTION STATISTICS

1) Apparent Steel Consumption of Total Steel Products (Year: 1995)

(Unit: Metric Tonnes)

Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Taiwan	Australia	Rep. of Korea	Japan	Vietnam	
Production (Hot-rolled Steel Products)	(A) 4 833 757	3 071 000	2 087 100	741 535	3 486 729	17 122 423	6 651 518	37 511 653	95 620 197	417 947	
Import	(B) 2 230 126	5 489 040	1 389 445	4 099 227	6 205 087	6 014 927	1 199 160	7 160 252	6 238 018	151 279	
Export	(C) 706 061	761 460	77 546	999 022	634 583	2 891 634	1 754 303	8 556 962	21 207 237	--	
Apparent Steel Consumption	(A)+(B)-(C)	6 357 822	7 798 580	3 398 999	3 841 740	9 057 233	19 583 558	6 096 375	36 114 943	80 650 978	569 226

2) Apparent Steel Consumption by Finished Steel Products (Year: 1995)

(Unit: Metric Tonnes)

Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Taiwan	Australia	Rep. of Korea	Japan	Vietnam
Rails & Accessories	N.A.	189 190	410	4 888	11 520	50 955	50 447	113 936	253 003	--
Steel Sheet Piles	20 912	94 150	176	54 635	16 477	N.A.	1 158	58 875	836 328	73
Sections	570 902	659 940	303 570	--	931 598	1 672 840	614 325	3 680 369	9 780 249	79 195
Bars	1 797 529	2 233 090	1 126 335	2 135 259	1 711 313	8 302 821	1 081 175	10 936 214	18 871 379	214 730
Wire Rods	817 484	840 000	300 876	--	1 089 908	1 957 986	578 898	2 489 678	6 318 742	214 117
Plates	610 696	678 510	180 041	490 743	778 213	1 363 089	641 485	4 470 787	9 027 860	32 296
Hot-rolled Sheets & Strips	688 401	1 230 740	373 847	531 349	2 959 107	*1) 1 568 406	3 193 289	5 428 362	8 290 874	--
Tyres & Wheels	N.A.	--	--	--	609	N.A.	28 780	29 609	23 774	--
Cold-rolled Sheets & Strips	789 330	854 660	430 293	12 451	1 026 362	1 758 897	1 614 625	3 260 868	5 755 469	27 626
Cold-rolled Electrical Sheets	35 454	226 460	5 028	37 288	129 213	226 304	35 327	362 867	1 444 329	1 189
Galvanized Sheets	473 317	565 310	410 121	142 572	710 207	1 144 782	596 645	1 952 349	9 282 243	46 441
Tinplates	214 735	200 000	241 997	80 548	286 858	259 330	504 897	435 624	907 981	--
Other Metallic-coated Sheets	N.A.	630 430	N.A.	--	205 279	579 579	519 900	761 887	1 422 253	--
Pipes & Tubes	626 052	733 680	139 113	368 140	1 323 709	926 549	113 034	3 263 201	6 395 540	12 600

*1) 552 158 MT Hot-rolled Band imported and 110 000 MT Stainless HRB hire-rolled is deducted to avoid double counting.

Source: Annual Statistical Year Book 1995, South East Asia Iron and Steel Institute (SEAISI).

EXPORT STATISTICS (Year 1995)

(Unit: Metric Tonnes)

Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Taiwan	Australia *1)	Rep. of Korea	Japan	Vietnam
Item										
Pig Iron/DRI/HBI	62 390	952 111	--	3 311	4 645	8 704	819	8 000	525 744	10 560
Ferro-alloys	48 846	1 330	28 116	2 726	57	2 702	148 103	3 000	70 476	--
Ingots & Semi-finished Products	22 931	21 680	--	6 000	82	18 923	1 163 682	440 000	633 476	--
Steel Products										
Rails & Accessories	93	670	--	6 020	31	4 246	16 390	38 650	206 661	--
Steel Sheets Piles	2 923	2 580	--	17 797	15 314	2 846	1 052	123 094	103 187	--
Sections	3 633	56 690	--	109 111	132 233	120 873	49 102	401 811	1 240 761	--
Bars	6 036	93 500	21	38 259	21 414	122 502	41 317	269 377	437 745	--
Wire Rods	80 960	40 000	--	286 198	2 553	190 676	173 300	161 050	943 067	--
Plates	2 586	--	--	133 394	9 784	139 737	57 778	633 597	1 491 163	--
Hot-rolled Sheets & Strips	363 315	--	--	133 181	150 729	815 574	851 414	2 842 233	3 505 981	--
Tyres & Wheels	--	--	--	--	4	210	N.A.	380	30 438	--
Cold-rolled Sheets & Strips	103 290	83 310	27 600	6 761	16 666	867 416	42 210	1 975 855	6 400 599	--
Cold-rolled Electrical Sheets	148	--	--	11 794	4	63 291	161	49 090	554 473	--
Galvanised Sheets	28 094	234 260	99	90 519	9 874	215 831	126 565	730 991	2 347 192	--
Tinplates	241	10 450	2 600	32 395	953	85 381	103 588	149 033	810 312	--
Other Metallic-coated Sheets	169	--	--	--	2 855	76 920	229 472	327 918	637 085	--
Pipes & Tubes	114 574	240 000	47 226	133 593	272 169	186 131	61 954	853 883	2 498 573	--
<i>Steel Products Total</i>	<i>706 061</i>	<i>761 460</i>	<i>77 546</i>	<i>999 022</i>	<i>634 583</i>	<i>2 891 634</i>	<i>1 754 303</i>	<i>8 556 962</i>	<i>21 207 237</i>	<i>--</i>
Others										
Cold Drawn Bars	1	67 380	1	--	4 121	9 228	17 601	23 000	28 567	--
Steel Wires	46 472	185 610	40	13 215	10 477	107 043	51 248	230 000	191 231	--
TOTAL IRON & STEEL PRODUCTS	886 701	1 989 571	105 702	1 024 274	653 965	3 038 234	3 135 756	9 260 962	22 656 731	10 560

*1) 1995 export figures cover from July 1995 to June 1996.

Source: Annual Statistical Year Book 1995, South East Asia Iron and Steel Institute (SEAISI).

IMPORT STATISTICS (Year 1995)

(Unit: Metric Tonnes)

Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Taiwan	Australia *1)	Rep. of Korea	Japan	Vietnam
Item										
Pig Iron/DRI/HBIs	1 060 418	154 100	60 109	84 518	295 019	1 185 182	148 726	2 836 000	2 775 854	--
Ferro-alloys	71 672	60 550	10 956	9 180	53 122	395 191	59 313	499 000	1 869 476	--
Ingots & Semi-finished Products	1 388 544	630 800	2 256 742	226 880	3 428 112	7 471 695	73 083	3 261 000	567 568	110 416
Steel Products										
Rails & Accessories	12 091	189 860	410	10 908	11 551	53 875	4 940	18 390	4 859	--
Steel Sheets Piles	23 835	96 730	176	72 432	31 791	12 856	2 210	2 638	70 372	73
Sections	130 659	501 630	99 570	749 351	571 852	682 273	29 804	979 694	23 897	20 649
Bars	108 826	150 590	60 356	130 710	301 352	204 809	57 209	416 895	37 453	20 157
Wire Rods	202 155	200 000	225 876	947 231	766 594	876 703	89 065	606 308	441 351	49 289
Plates	201 121	678 510	163 241	624 137	681 722	469 826	333 375	1 544 070	1 328 104	32 296
Hot-rolled Sheets & Strips	581 375	1 230 740	241 647	664 530	1 978 603	1 952 475	119 909	2 351 504	2 550 957	--
Tyres & Wheels	--	--	--	--	613	2 332	N.A.	17 581	134	--
Cold-rolled Sheets & Strips	556 300	707 970	331 693	19 212	1 043 028	625 576	161 235	239 091	997 654	27 626
Cold-rolled Electrical Sheets	35 601	86 940	5 028	49 082	129 217	97 595	12 988	128 130	18 179	1 189
Galvanised Sheets	43 394	520 220	60 420	233 091	350 259	529 613	171 810	320 610	430 214	--
Tinplates	83 657	24 520	117 897	112 943	16 663	114 658	2 655	12 840	23 717	--
Other Metallic-coated Sheets	57 645	630 430	62 791	--	75 964	239 499	38 972	101 863	45 518	--
Pipes & Tubes	193 467	470 900	20 339	485 600	245 878	152 837	174 988	420 638	265 608	--
<i>Steel Products Total</i>	<i>2 230 126</i>	<i>5 489 040</i>	<i>1 389 445</i>	<i>4 099 227</i>	<i>6 205 087</i>	<i>6 014 927</i>	<i>1 199 160</i>	<i>7 160 252</i>	<i>6 238 018</i>	<i>151 279</i>
Others										
Cold Drawn Bars	3 342	21 409	5 501	--	21 157	15 669	3 846	17 000	3 909	--
Steel Wires	53 104	65 000	16 828	71 618	72 786	36 780	47 554	27 000	145 262	--
TOTAL IRON & STEEL PRODUCTS	4 807 206	6 420 899	3 779 581	4 491 423	10 075 283	15 119 444	1 531 682	13 800 252	11 600 087	261 695

*1) 1995 import figures cover from July 1995 to June 1996.

Source: *Annual Statistical Year Book 1995*, South East Asia Iron and Steel Institute (SEAISI).

THE MALAYSIAN ECONOMY

BY

MR. TOH HUAN SHIN
GENERAL MANAGER, SOUTHERN STEEL BERHAD

Performance of the economy in 1995

The Malaysian economy recorded a strong performance for the eighth consecutive year in 1995 with a growth of 9.5 per cent (9.2 per cent in 1994), making it the longest period of sustained growth experienced by the country (Bank Negara Annual Report, 1995). Last year's better than expected high growth rate was attributed to the buoyant domestic activity as well as strong external demand. GDP growth emanated mainly from the strong performance of the manufacturing (33.1 per cent share of GDP), construction (4.4 per cent) and services (44.2 per cent) sectors (see Table 1).

Table 1. Malaysia: Selected macro economic indicators

	1993 (RM billion)	1994 (RM billion)	1995 (RM billion)
National products:			
GDP (at 1987 prices)	100.6	109.9	120.3
Agriculture, forestry & fishing	16.2	16.0	16.4
Mining & quarrying	8.0	8.2	8.9
Manufacturing	30.3 (30.1%)	34.8 (31.7%)	39.8 (33.1%)
Construction	4.0 (4.0%)	4.6 (4.2%)	5.3 (4.4%)
Services	44.4	48.7	53.2
GNP (at current prices)	153.5	176.4	202.5
GNP (at 1978 prices)	95.3	104.4	113.5
Aggregate domestic demand	100.2	113.3	129.8
Private expenditure	72.3	82.3	93.4
Private consumption	47.8	51.1	57.2
Private investment	24.8	31.1	36.1
Public expenditure	27.9	31.0	36.4
Public consumption	14.9	16.4	18.1
Public investment	13.1	14.5	18.2
Balance of payments			
Merchandise balance	8.2	4.6	0.6
Exports	118.4	148.5	180.9
Imports	110.2	143.9	180.3
Services account (net)	-16.0	-15.9	-18.8
Current account balance	-7.4	-11.0	-17.8
Current account balance (% of GNP)	-4.8	-6.2	-8.8

Source: BNM annual report 1995.

Malaysia's overall trade improved by 4.3 per cent during the year owing mainly to higher increases in export prices relative to the growth of import prices. On the whole, nominal per capita income rose by 12.2 per cent to about RM 10 100 (US\$4 040) in 1995 compared to almost RM 9 000 (US\$3 600) in the previous year.

The country's strong economic growth phase (1988-1995), while commendable by any standards, has posed a new set of new challenges for Malaysia. The current expansion in the economy is driven by increases in factor inputs (namely capital and labour) rather than by productivity. The substantial increase in investment, especially for capacity expansion and infrastructural projects, has implications on external balance (owing to increased imports associated with these investments) and long-term sustainable economic growth.

In order to rectify this situation, a three-pronged strategy has been recommended:

- Switch to productivity-based growth as opposed to input-driven growth: This is to ensure that future growth is mainly led by increased efficiency in the utilisation of physical and human resources, higher technology and an efficient combination of resources and technology.
- Focus on quality rather than quantity of investments given the full employment situation: The current strategic shift towards more capital and technology-intensive investments with high export-orientation, lower import content and high interlinkages needs to be accelerated to generate maximum value-added and foreign exchange earnings. In particular, the manufacturing sector needs to further integrate activities in the value chain from production to complementary functions such as R & D, design, distribution and marketing.
- Achieve an appropriate mix between productive investments that generate income (especially export earnings) and infrastructure investments: this balance would further enhance future productivity capacity and facilitate the growth process.

The Malaysian economy is currently operating at full employment and most sectors are experiencing labour shortages, especially in the skilled categories. As a consequence, productivity and efficiency increases of the labour force have to be addressed. The core lies in moving to higher value-added manufacturing and more sophisticated services activities. In this regard, it is envisaged that information technology (IT) will play an increasingly important role in the future. The use of IT for greater competitiveness will go a long way in enabling Malaysia to meet the challenges of global competition and in ensuring the continued expansion of its exports.

Another area of concern is the large current account deficit in the balance of payments (BOP). While Malaysian exports have continued to perform strongly, the stronger growth in imports (especially those associated with the high rate of investments) and larger services account deficit have resulted in a widening deficit of the current account. To contain this problem, BNM has recommended strategies for investment policies and an accelerated development of the services sector. Priorities have been suggested for investment projects that are export-oriented, have reduced import content, efficiency of production and high inter-linkages to generate maximum value-added. Likewise, a strong, well-balanced and efficient services sector would strengthen Malaysia's competitive advantage and contribute to national output as well as the BOP.

Structure of the Malaysian steel industry

The steel industry in Malaysia can be grouped into three distinct product groups (Table 2):

Primary products

Scrap-substitute	:	Hot Briquetted Iron (HBI) Direct Reduced Iron (DRI)
Crude steel (Semi-finished)	:	Billets Blooms Slab

Perwaja is Malaysia's sole producer of DRI in Kemaman, while HBI is produced by Amsteel Mills (formerly Sabah Gas Industries) in Labuan. DRI/HBI are substitutes to scrap for use as the raw material in the making of crude steel products of billets and blooms.

There are currently six producers of billets (feedstock for the finished long steel products of bars and wire rods). They are Perwaja, Amsteel Corporation (formerly ASM), Southern Steel, Malayawata, Antara and Dah Yung. Perwaja will by early 1996 also become the country's first producer of blooms, used as feedstock for the finished long steel products of sections (medium and heavy). Currently Malaysia does not produce slabs, traditionally the feedstock for the finished flat steel products of hot-rolled sheets and plates.

Finished/rolling products

Long products	:	Bars Wire rods Sections
Flat products	:	Hot-rolled plate and sheets Cold-rolled sheets

Production of long products especially for bars is well catered-for in Malaysia. The major producers for bars and wire rods are the same as for billets. Currently, only small sections are produced by domestic producers such as Anshin, Leader and Antara. Perwaja too will be Malaysia's first producer of medium and heavy sections when its Gurun plant comes on stream in 1997.

There is currently no local production of hot-rolled sheets. All of Malaysia's requirements for hot-rolled are imported. A portion of that goes to making cold-rolled sheets by Maruichi's Cold Rolling Industry Sdn Bhd and Ornasteel Enterprise Corporation.

Table 2. Structure of the steel industry in Malaysia (1995)

Sub-Sector	Product type	Number of establishments	Rated capacity ('000 tonnes)
Primary Products	Direct Reduced Iron	1	1 200.0
	Hot-Briquetted	1	720.0
	Billet	6	3 186.0
	Bloom	-	
	Slab	-	
Rolling/Finished Steel Products	Round/Deformed Bars	23	2 500.0
	Flat, square and angled bars (Small Sections)	5	450.0
	Wire rods	4	900.0
	Hot-rolled sheets	-	-
	Cold-rolled sheets	2	420.0
Secondary Products - Longs	Galvanized wire	7	84.0
	High-carbon wire & strand	2	120.0
	- PC wire and PC strand		
	Spring wire		
	Welding wire and bead wire		
	Wire rope and strand		
	Barbed wire	20	20.0
	Bolts and nuts	16	100.0
	Welded mesh	35	400.0
	Nails	16	50.0
	Welding electrode	9	42.0
	Polished shaft and		
	Cold drawn flat bar	7	70.0
Secondary Products - Flats	Steel and cement-lined steel pipes	18	600.0
	- Black pipes, galvanised steel pipes and tubes		
	- Seamless tubes		
	- Pipe fittings	4	12.0
	Tinplate	1	240.0
	Galvanised, prepainted and roll-formed sheets	25	200.0
	Steel service centre	9	720.0

Source: MISIF

Secondary steel products

Long secondary	:	Nails Wire Wire mesh Bolts and nuts Bared wire etc.
Flat secondary	:	Coated/painted steel Tubes and pipes (seamed)

There are numerous secondary long steel products ranging from nails and barbed wire to wire mesh and bolts and nuts. The number of players here is equally numerous.

For coated steel sheets (from cold-rolled sheets), there is one tinplate producer (Perstima) and four major galvanizers (Federal Iron Works, Malaysia Galvanised Iron Works, South Malaysia Bhd, Yung Kong Galvanising Industries Bhd). There are also 22 pipe makers (which may use either hot or cold-rolled steel for their production).

Performance of the steel industry

Overall performance in 1995

The iron and steel industry performed commendably in 1995 with the output of primary products (i.e. scrap substitutes and semi-finished products) exceeding 3.6 million tonnes, finished/rolling longs (i.e. bars, wire rods and sections) registering 3.1 million tonnes, finished/rolling flats (i.e. namely cold-rolled sheets) amounting to 230 000 tonnes, and secondary flats (i.e. coated sheets and pipes and tubes) reaching 968 000 tonnes. Capacity utilisation for some steel mills was in the range of 90 per cent as production volumes soared to keep pace with demand. Table 3 summarises the performance and consumption of the Malaysian iron and steel industry in 1995.

While the production of primary iron and steel products is generally able to meet the demand of the domestic construction sector, that of other products such as blooms/slabs, hot-rolled, sections and stainless steel has been either inadequate or totally absent. To overcome this setback and to further boost Malaysia's industrialisation efforts, the government is encouraging the setting up of more iron and steel downstream manufacturing operations. In line with this policy, a total of 37 iron and steel projects worth RM 3.4 billion were approved in 1995. The reason for increasing capacity is not only to meet increasing domestic demand but to explore export markets as well.

Although exports of iron and steel products grew 16.9 per cent to RM 1.2 billion in 1995, imports rose by a staggering 30.3 per cent to RM 8.0 billion. A large proportion of these imports were flat products (i.e. hot and cold-rolled sheets and coils, plates, coated sheets and seamless pipes and tubes) which are currently not produced locally. Imports of these items are used for finishing processes in industries such as shipbuilding, automotive, machinery and engineering, container-making and food canning. The upward surge in the consumption of flat steel products is expected to continue as Malaysia continues its industrialisation drive. And until such products can be produced locally, their demand will continue to be met by imports.

As for exports, more and more Malaysian steelmakers are beginning to export their products. Currently, most of the country's iron and steel products are targeted at regional countries such as Thailand, Singapore and China. Export demand is expected to remain buoyant as the international cost competitiveness of traditional steel suppliers has eroded somewhat due to factors such as currency appreciation and escalating labour costs.

Table 3. Performance of the iron & steel industry for consumption, 1995 (MT)

Items/Products	Production	Imports	Exports	Consumption
DRI/HBI	1 178 000	21 060	862 730	336 330
Semi-finished Products (Billets)	2 450 000	630 800	21 680	3 059 120
Sections	215 000	501 630	56 690	659 940
Bars	2 176 000	150 590	93 500	2 233 090
Wire Rods	680 000	200 000	40 000	840 000
Plates	-	678 510	-	678 510
Hot-Rolled Sheets	-	1 230 740	-	1 230 740
Cold-Rolled Sheets and Coils	230 000	707 970	83 310	854 660
Galvanised Sheets	279 350	520 220	234 260	565 310
Tinplate	185 930	24 520	10 450	200 000
Other Metallic-Coated Sheets	-	630 430	-	630 430
Pipes and Tubes	502 780	470 900	240 000	733 680

Source: MISIF

Outlook of the Malaysian steel industry

Apparent steel consumption per capita

Table 4. Malaysia: trends in apparent steel consumption (ASC) per capita

	Year	ASC ('000 Tonnes)			Population (Million)	ASC Per Capita (Kg)		
		Case 1	Case 2	Case 3		Case 1	Case 2	Case 3
Actual	1990	2 925	2 925	2 925	17.8	164.3	164.3	164.3
	1991	3 431	3 431	3 431	18.2	188.5	188.5	188.5
	1992	3 747	3 747	3 747	18.6	201.5	201.5	201.5
	1993	4 475	4 475	4 475	19.0	235.5	235.5	235.5
	1994	5 389	5 389	5 389	19.7	273.6	273.6	273.6
	1995	6 981	6 981	6 981	20.1	347.3	347.3	347.3
Projected	1996	7 539	7 819	8 098	20.5	367.8	381.4	395.0
	1997	8 143	8 757	9 394	21.5	378.7	407.3	436.9
	1998	8 794	9 808	10 897	21.9	401.6	447.9	497.6
	1999	9 498	10 985	12 640	22.4	424.0	490.4	564.3
	2000	10 257	12 303	14 662	22.9	447.9	537.2	640.3
	2001	10 975	13 533	16 422	23.4	469.0	578.3	701.8
	2002	11 743	14 887	18 393	23.9	491.3	622.9	769.6
	2003	12 566	16 375	20 600	24.4	515.0	671.1	844.3
	2004	13 445	18 013	23 072	25.0	537.8	720.5	922.9
	2005	14 386	19 814	25 840	25.5	564.2	777.0	1013.0

Case 1: Assume steel consumption of 8% between 1996-2000 and 7% between 2001-2005.

Case 2: Assume steel consumption of 12% between 1996-2000 and 10% between 2001-2005.

Case 3: Assume steel consumption of 16% between 1996-2005 and 12% between 2001-2005.

The population of Malaysia is assumed to grow at 2.2 per cent per annum between 1996-2005.

Malaysia's projected ASC and ASC per capita under the three proposed scenarios is shown in Table 4. Under the low-growth scenario (Case 1), the ASC is expected to grow from about 7.0 million tonnes in 1995 to 10.3 million tonnes in the year 2000 and to 14.4 million tonnes in the year 2005. Likewise, ASC per capita is projected to rise from 347.3 kg in 1995 to 447.9 kg in the year 2000, and is expected to reach 564.2 kg by the year 2005.

For the average-growth scenario (Case 2), the ASC is expected to hit 12.3 million tonnes in the year 2000 and 19.8 million tonnes in 2005. Under this scenario, the ASC per capita would reach 537.2 kg in the year 2000 and 777.0 kg by the year 2005.

Under the high-growth scenario (Case 3), the ASC is anticipated to be 14.7 million tonnes in the year 2000 and reach a staggering 25.8 million tonnes by the year 2005. This translates to an ASC per capita of 640.3 kg in the year 2000 and a high 1 013 kg by the year 2005.

Consumption outlook: longs vs flats

Malaysia's steel consumption of 6 981 000 MT in 1995 consisted of 3 733 000 MT (or 53 per cent) of finished long products and 3 248 000 MT of finished flat products. In projecting the steel consumption of longs and flats over the 1996-2005 period, it is assumed that the percentage of flats will rise steadily to 60 per cent in the year 2005 against 40 per cent for longs (see Table 5). Going by this premise, Malaysia's consumption of 19.8 million tonnes of steel in the year 2005 (base scenario) would consist of 11.9 million tonnes of flats and 7.9 million tonnes of longs.

The reason for this assumption lies in the fact that as a country industrialises, the emphasis in steel consumption patterns shifts from longs to flats. Flat products are essential indicators of steel consumption in a developed country. The primary production of flat products requires expensive equipment, high investment, and considerable technical skills and knowledge. It also necessitates proper quality control and involves a long gestation period for "returns on investment".

The value-added activities for flats in Malaysia are currently confined to three main areas:

- service centres i.e. those companies that import hot-rolled coils and slit/shear them to the required dimensions;
- companies that import hot-rolled "mother-coils" and roll them into cold-rolled coils for tubes and pipes, etc.; and
- companies that import cold-rolled coils and use these as feedstock for their coating operations, e.g. galvanising and tinsplating.

With the coming on-stream of MegaSteel's and Gunawan's hot-rolled plant and plate mill in the near future, it is envisaged that imports of flat products would be reduced as Malaysia will be in a position to supplement the increasing consumption of flats with local production. At present only Maruichi and Ornasteel have capacities for flats production in the country. These companies produce cold-rolled sheets using imported hot-rolled "mother-coils".

Table 5. Projected steel consumption for longs and flats (x 1 000 Mt)

Year	Total	Longs#	Flats*	Ratio of Longs to Flats
1995	6 981	3 733	3 248	53:47
1996	7 819	4 066	3 753	52:48
1997	8 757	4 466	4 291	51:49
1998	9 808	4 806	5 002	49:51
1999	10 985	5 573	5 712	48:52
2000	12 303	5 782	6 521	47:53
2001	13 533	6 225	7 308	46:54
2002	14 887	6 550	8 337	44:56
2003	16 375	7 041	9 334	43:57
2004	18 013	7 565	10 448	42:58
2005	19 814	7 926	11 888	40:60

Source: Compiled from various tables.

Longs include bars, wire rods and sections.

* Flats reflect estimates of imports to discount double counting.

Malaysia's consumption of billets will rise from 3.2 million tonnes in 1995 to 4.6 million tonnes in the year 2000, and to 5.8 million tonnes by the year 2005. Malaysia will be able to cater for most, if not all of this consumption as the country's steelmaking capacity for billets/blooms is expected to reach 6.0 million tonnes by the year 1998 from the current 3.2 million tonnes.

Parallel to the increase in billet making facilities, steel mills are also expected to increase rolling capacities from 3.4 mil MT to 5.8 mil MT in the year 1998.

Conclusion

The outlook for the iron and steel industry in Malaysia in the short to medium term is optimistic and steel mills are expected to further expand their capacities by either adding to existing plants or introducing new facilities primarily for long products.

The total installed capacity for billets in 1996 is expected to increase to 3.5 million tonnes while that for rolling mills is expected to hit 3.6 million tonnes.

The buoyant mood is fuelled by the continuing strong growth of the Malaysian economy as well as the rapid industrialisation and infrastructural development programmes that are in various stages of implementation and planning.

With the fulfilment of Malaysia's requirement for long products, there is an impending need to produce flat products locally in view of the country's changing economic structure and focus on industrialisation.

Plans are in the pipeline to begin the production of hot-rolled flat products in the country. This move will not only reduce Malaysia's dependence on imported flat products but would provide an

important domestic source of flats for the development of the manufacturing and heavy engineering related industries.

Major changes in regional and international patterns following the activities of GATT and the formation of AFTA and WTO pose challenging times for the Malaysian iron and steel industry in the decade ahead.

With the crumbling of protective barriers, Malaysian firms in the iron and steel industry must be prepared to compete with regional and global groups who would have better access to the local market.

For Malaysian steel companies, efficiency and productivity are becoming increasingly critical -- they are aware that competition is based not only on elements of pricing but also on innovative and knowledge based activities that would determine ways of configuring new products and improved procedures.

DEVELOPMENT OF THE IRON AND STEEL INDUSTRY IN CHINA AROUND THE YEAR 2000

BY

**MR YANG ZUNQUING
DEPUTY DIRECTOR, FOREIGN AFFAIRS, MINISTRY OF METALLURGICAL INDUSTRY**

Steel, as an important basic raw material, plays a key role in economic development all over the world. China, without exception, has attached importance to developing its iron and steel industry. With the rapid development of the national economy since 1978, great progress in the steel industry has been attained.

After more than 40 years development, China's steel output reached 95 million tons last year and became the second largest steel producer in the world. Now, a complete steel production system including mines, various kinds of steel making plants, coking and chemical plants, refractory plants, ferroalloy plants, carbon material plants as well as other sectors such as geological exploration, engineering design, construction work and scientific research has been established.

China is vast in territory and rich in mineral resources. Therefore, China is mainly based on its own resources to develop its steel industry.

Up to now, 53.1 billion tons of iron ore reserves have been proved in China. Among them, more than 26 billion tons are exploitable by using available technologies. Actually, more than 17 billion tons of iron ore have already been mined.

The average Fe content of iron ore in China is about 33 per cent and there is a considerably high proportion of paragenetic iron ore such as vanadic-titano magnetite, rare-earth and niobium paragenetic iron ore, all of which are of complicated compositions.

Due to these above-mentioned features, a large amount of research and development has been done in iron ore processing. Based on the sophisticated mineral processing technology, a stable quality of iron concentrate can be obtained. In general, the grade of magnetite concentrate remains on the level above 64 per cent, and the grade of hematite concentrate remains on the level above 67 per cent.

Although domestic output of iron ore has reached 262 million tons in 1995, it still cannot meet the growing needs of the iron and steel industry. The policy of actively using foreign iron ore resources to promote the development of China's steel industry has been implemented. Import of iron ore to China has increased year by year since 1980 and reached 41.15 million tons in 1995. The pig iron produced by imported ore is more than one quarter of the total domestic pig iron output in 1995.

As a developing country, China's steel industry entered a successive development period more than ten years ago. Looking back at the past, China's steel industry has gone through three main periods. From 1952 to 1957, it could be called a smooth and steady development period; from 1958 to 1978, it

was characterised by a fluctuating and tortuous opening; and since 1978, it has been in a more rapidly growing period by carrying out the policies of reform and opening to the outside world.

The share of China's crude steel in the world steel output has increased from 4 per cent in 1978 to around 13 per cent in 1995. During this period, there is also a change in China's steel output mix featuring an increased converter steel share from 33.4 per cent in 1978 to 66.7 per cent in 1995, and decreased open hearth steel share from 35.47 per cent in 1978 to 13.7 per cent in 1995.

China's steel industry possesses a large number of works, and most of them are small scale and widely scattered over the country. There are different levels in technology adopted and facilities installed in the industry. Both advanced steel makers such Baoshan Iron and Steel Corp., Wuhan Iron and Steel Co. and Tianjin Steel Pipe Co., and a large number of ordinary steel plants based on appropriate technology coexist. The formation of all these steel mills are mainly due to the specific conditions of resources, energy, transportation, funds as well as the market need. While the integrated steel mills are supplying their products to the whole domestic markets, the local steel mills are serving the regional demands. At present, the ratio of crude steel production by the local steel works has been increased to about 30 per cent.

Nowadays, there are 22 iron and steel works with an annual crude steel output of over 1 million tons in China. Baoshan Iron and Steel Corp., Anshan Iron and Steel Corp. and Shougang Corp., the biggest three, have already been able to produce 8 millions tons of crude steel annually.

There are also a number of special steel enterprises in China.

Great efforts have been devoted to developing HSLA steel. Occupying a share of 20.29 per cent in total crude steel output, the output of HSLA steel was 19.31 million tons in 1995.

Although the production of steel products increased continuously, we still cannot meet the huge domestic demand. The crude steel output per capita was only about 80 kg last year. China will continue to be a steel importer for quite a long period of time. China also exports steel products, but the amount is limited.

The practical circumstances of steel import and export indicates that the domestic market has already been matched with the international market one. In most cases, the domestic steel price is structured in reference to the steel price in the international market. In other words, the fluctuation of international price has a direct impact on China's domestic steel market.

Since the beginning of the 90s, the steel industry has developed further and capital investment has increased. The emphasis of the investment has been put on the technological renovation of existing steel enterprises, especially on the construction of continuous casting machines, leading to a rapid increase of the output of C.C. semis. Meanwhile, 12 blast furnaces, with a total inner volume of 24.053m³ have been added. All these blast furnaces are designed, manufactured, installed and commissioned mainly by the domestic technological forces, and all blast furnaces have run smoothly. More than 90 per cent of the equipment of 4350m³ blast furnace in Baoshan Iron and Steel Corp. is made in China. A number of hot strip and wire rod mills have been built, and a large number of plate mills have also been renovated. All these moves make the industry become more vigorous.

Looking towards the year of 2000, a sustained and rapid development of China's steel industry can be expected while the industry retains its feature of a big continental developing country. Opening its door more widely, the industry will strengthen the co-operation with other countries on the basis of mutual

benefits. With the idea of improving quality, increasing varieties, lowering cost and raising economic results, China's steel industry will obtain further development by transforming enterprises' operation mechanisms and optimising structures. In its future development, China's steel industry will have some major tasks.

Crude steel output will approach 100 millions tons by 1997, and 110-120 million tons by the year 2000. China's steel industry will focus its efforts on rationalising product mix, improving product quality and increasing output to meet the needs of national economy and social development. China will speed up the development of sheet and strip production. The ratio of flat products and tubular products will increase and may reach 44-45 per cent in the year 2000, whereas long products will maintain a considerably larger proportion of over 50 per cent.

A multi-level structure of steel industry will still be maintained until the beginning of the next century. The advanced steel plants with modern technology and management, and the plants with practical technology, especially the local steel mills that mainly serve the local construction steel market will co-exist.

The geographic distribution of China's steel industry will be readjusted based on comprehensive conditions of different regions such as ore resources, energy, transportation, funds and different market demands.

The traditional production route using iron ore will be developed. At the same time, an effort will be made to develop modern EAF plants. In the foreseeable future, both routes will be developed. A number of EAF plants characterised by the use of large UHP electric furnaces will be erected in Jiangsu, Guangdong, Shanghai, Liaoning and Sichuan, etc. before the year of 2000.

China will widely use foreign resources, sophisticated technologies and equipment, funds and talents and increase international exchange and co-operation.

It is expected that China's economy will continuously grow at an average annual rate of 8-9 per cent for the next few years. China will still be a steel importer before and after the year 2000. Sheet and tube of superior quality will be the major imported products, and long products for construction will be supplied mainly by domestic steel plants.

Deepening the enterprise system reform and streamlining internal management will be a very important task in the next few years for the large and medium state-owned enterprises. In the spirit of the policy of socialist market economy, the state-owned enterprises will reform their operation mechanism and have the modern enterprise system introduced into the industry. A group of state-owned steel enterprises will be changed gradually to shareholding and limited liability companies to improve their operation effectiveness and efficiency and strengthen their ability to satisfy the demands of markets both at home and abroad. Meanwhile, the labor force on the main production line will be greatly reduced in order to raise productivity. The surplus labor force will shift to other business areas by setting up sub-companies. The newly-formed companies will become new profit-making units and the development of their business can be multi-directional.

In order to make the development of China's economy match quickly with the international economy, China is committed to its promises for entering WTO and worked out a series of measures in line with the international practices with regard to foreign trade. Starting from 1995, China has reduced on a large scale import tax, including a 33 per cent tax reduction for the import of iron and steel technology, equipment and products. Many colleagues abroad think that now it is a good time to invest in

China's iron and steel industry, and a number of companies have approached us to negotiate this possibility. We warmly welcome those who have the will and determination to invest in the industry. Favourable terms will continuously be provided to the "high-tech" and "high knowledge" investment projects.

In conclusion, we would like to express our thanks to the Steel Committee of the OECD for inviting us to attend the Workshop, so that we can have a chance to exchange information and establish links with the member states and iron and steel circles. We believe this is beneficial to our future economic and trade co-operation.

**OUTPUT, CONSUMPTION, IMPORT AND EXPORT OF STEEL PRODUCTS IN CHINA
FROM 1980 TO 1995**

(In million tonnes)

Year	Export	Import	Output of steel products	Consumption
1980	0.44	4.91	27.16	30.95
1981	0.69	3.31	26.70	28.27
1982	0.88	3.39	29.02	34.44
1983	0.68	9.59	30.72	39.03
1984	0.20	12.81	33.72	44.62
1985	0.18	18.03	36.92	49.83
1986	0.23	18.37	40.58	51.93
1987	0.38	12.40	43.86	56.34
1988	0.81	9.13	46.89	57.96
1989	0.82	9.48	48.59	53.60
1990	2.16	4.24	51.53	50.87
1991	2.83	3.58	56.38	57.30
1992	1.91	7.06	66.94	72.81
1993	1.12	30.26	77.07	92.35
1994	1.74	22.83	84.28	98.00
1995	5.93	13.97	79.39	99.04

THE GEOGRAPHIC DISTRIBUTION OF CHINA'S IRON AND STEEL INDUSTRY

Percentage (%)

Area	1950	1960	1970	1980	1990	1995
Huabei area	12.72	17.08	19.96	21.51	22.69	25.43
Northeast area	82.83	43.90	37.32	26.44	20.89	16.02
Huadong area	1.95	19.85	23.70	24.74	27.57	30.61
Zhongnan area	0.90	10.05	13.57	15.05	16.64	15.57
Southwest area	1.61	8.22	4.51	10.34	9.38	9.23
Northwest area	0.00	0.90	0.94	1.91	2.82	3.15

CHINA'S MAJOR SPECIAL STEEL ENTERPRISES

Company	Location	Output of crude steel in 1995 (in tonnes)	Output of steel products in 1995 (in tonnes)
Taiyuan Iron and Steel Group Co.	Shanxi Province	2 287 237	1 735 992
Shanghai Iron & Steel Co.	Shanghai City	1 425 724	966 881
Yegang Huchang Group	Hubei Province	524 892	406 214
Chengdu Iron and Steel Works	Sichuan Province	477 449	415 250
Changcheng Special Steel Co.	Sichuan Province	450 350	438 067
Fushun Steel Plant	Liaoning Province	398 642	324 006
Beiman Special Steel Co. Ltd	Heilongjiang Province	396 729	333 853
Xining Steel Plant	Qinghai Province	354 942	293 461
Dalian Steel Plant	Liaoning Province	301 025	239 819
Chongqing Special Steel Group	Sichuan Province	220 361	199 909
Wuyang Iron & Steel Co.	Henan Province	191 339	192 632
Guiyang Steel Plant	Guizhou Province	170 267	142 805
Shaanxi Steel Plant	Shaanxi Province	125 111	104 648

CHINA PIG IRON AND CRUDE STEEL PRODUCTION OF KEY AND LOCAL ENTERPRISES

Year	Pig iron			Crude Steel		
	Total production (10 ³ t)	Key enterprises (%)	Local enterprises (%)	Total production (10 ³ t)	Key enterprises (%)	Local enterprises (%)
1978	31 785	77.03	21.99	31 780	78.82	13.20
1979	36 725	70.87	27.28	34 484	78.35	13.99
1980	38 024	73.20	25.67	37 112	78.02	15.59
1981	31 157	79.23	19.93	35 603	76.99	17.41
1982	35 509	72.95	26.33	37 158	76.25	17.99
1983	37 378	71.33	27.86	40 028	74.20	19.21
1984	40 012	70.16	28.72	43 475	72.96	20.18
1985	42 036	70.94	27.09	46 794	71.39	21.51
1986	50 639	66.01	30.46	48 067	70.30	22.76
1987	55 932	68.71	30.99	56 280	71.89	21.73
1988	57 040	63.11	32.20	59 430	71.04	22.75
1989	58 201	61.30	33.90	61 590	69.22	24.82
1990	62 372	60.25	34.44	66 348	68.41	26.13
1991	67 654	61.38	33.63	70 370	68.02	27.15
1992	75 893	61.13	33.18	80 934	65.41	28.17
1993	87 340	56.81	32.83	89 277	63.88	29.32
1994	96 418	54.13	31.46	92 623	63.92	30.21
1995	101 708	53.46	32.21	94 000	64.18	30.71

**THE MAJOR IRON AND STEEL WORKS IN CHINA
(WITH THE ANNUAL STEEL OUTPUT OVER 1 MILLION TONNES)**

Company	Location	Output of crude steel in 1995 (in tonnes)	Output of steel products in 1995 (in tonnes)
Baoshan Iron & Steel Corp.	Shanghai City	8 227 814	4 793 670
Anshan Iron & Steel (Group) Co.	Liaoning Province	8 130 598	5 180 458
Shougang Corp.	Beijing City	8 006 140	6 210 649
Wuhan Iron & Steel (Group) Co.	Hubei Province	5 413 995	4 780 610
Baotou Iron & Steel Co.	Inner Mongolia Region	3 301 951	2 361 215
Benxi Iron & Steel (Group) Co.	Liaoning Province	2 641 003	2 051 974
Maanshan Iron & Steel Co. Ltd	Anhui Province	2 578 483	1 920 558
Panzhuhua Iron & Steel Co.	Sichuan Province	2 537 759	1 652 834
Shanghai N°1 Iron & Steel (Group) Co.	Shanghai City	2 531 994	1 435 454
Taiyuan Iron & Steel (Group) Co. Ltd	Shanxi Province	2 287 237	1 735 992
Handan Iron & Steel General Works	Hebei Province	2 150 800	1 534 400
Tangshan Iron & Steel Group Co. Ltd	Hebei Province	2 085 207	1 675 510
Shanghai N°3 Iron & Steel Works	Shanghai City	2 007 819	1 982 500
Anyang Iron & Steel Group Co.Ltd	Henan Province	1 777 800	1 462 000
Jinan Iron & Steel Group Corp.	Shandong Province	1 702 000	1 013 500
Shanghai Huchang Iron & Steel Co.	Shanghai City	1 425 724	966 001
Kunming Iron & Steel Corp.	Yunnan Province	1 278 200	1 111 600
Chongqing Iron & Steel (Group) Co.	Sichuan Province	1 235 862	856 820
Tianjin Tiangang Group Co. Ltd	Tianjin City	1 217 088	1 229 945
Laiwu Iron & Steel General Works	Shandong Province	1 118 100	732 300

STEEL TRADE AND DEVELOPMENT IN THAILAND

BY

**MRS. PRAKMARD SUWANASING
DIRECTOR OF METALLURGY DIVISION**

**AND MR. SATID THERDKIATTIKUL
METALLURGICAL ENGINEERING DIVISION**

DEPARTMENT OF MINERAL RESOURCES, MINISTRY OF INDUSTRY

Country's economy

1. 1995 GDP: 8.6 per cent
2. 1995 steel consumption: 200 kgs per capita per year
3. 1996 GDP: 7.9 per cent
4. 1996 prediction of steel consumption growth: 6 per cent
5. 1996 steel trade targets
 - import: 6 200 million US\$
 - export: 820 million US\$

Development towards free trade

Strengthen local steel industry to compete with world trade liberalisation

- Standard for quality management and quality assurance
- Marketing

Domestic primary steel products

1. Raw steel products (pig iron and ferro-alloys)
2. Semi-finished steel products (ingot, bloom and billet)

3. Structural steel products (merchant bars, rod and section)
4. Hot-rolled flat steel products
5. Coated steel products (tinplate, galvanised sheet and others)

Major raw materials and steel products imported

1. Scrap and pig iron for steel and iron making
2. Cold-rolled steel sheet
3. Hot-rolled stainless steel coil

Steel consumption and trade statistics for 1995

1. Local steel consumption: 12 million tons
(25 per cent and 50 per cent of total steel consumption are structural steel and flat products)
2. Steel trade
 - imported value: 5 303 million US\$
 - exported value: 521 million US\$

Import taxes for steel products

1. 1 per cent for raw steel products (pig iron, scrap, sponge iron) and ferro-alloys
2. 5 per cent for crude steel (ingot, billet, slab and bloom)
3. 4 per cent for heavy plate/large section
4. 3 to 10 per cent for hot-rolled and cold-rolled flat products
5. 10 per cent for structural steel (bar and section)
6. 10 to 17 per cent for low carbon mesh type wire rods

Import surcharges

1. 3 per cent for HR coil and low C wire rod
2. 9 per cent for CR stainless steel sheet
3. 10 per cent for mesh-type wire rod

4. 16 per cent for large steel section

Government's policies

1. Establishment of the master plan for the steel industry
2. Integrated steel plants
3. Providing:
 - database of iron and steel industries
 - infrastructure
 - initiation of joint venture agreement
 - allocation of industrial estates
 - negotiation for energy and power
 - promotional privileges in tariffs
 - planning and management for energy, raw materials and mineral resources, standardisation and industrial technology

Outlook

1. High demand for steel:
 - mass transit projects
 - infrastructure projects
 - shift of industrial bases to the developing countries
 - housing and building projects
2. Several steel projects come on stream:
 - 8 million tonne per year (tpy) of DRI/HBI/pig iron
 - 8.5 million tpy of hot-rolled coil and hot-rolled thin sheet (as thin as 1 mm)
 - 4.0 million tpy of cold-rolled products
3. New technology developments:
 - DRI/HBI productions
 - continuous thin slab casting/rolling process

- integrated steel complex by CO-BF-BOF-CCM
- special steel productions (alloy steel and stainless)
- etc.

4. Self-reliance on steel consumption by the year 2000

Strategic plans for steel trade and development

Measures:

- Anti-dumping
- Industrial standard (e.g. ISO 9000 series and ISO 14000 series)
- Tax and surcharge

Planning and Management:

- Raw material supply
- Energy supply
- Plant location
- Infrastructure development
- Technology selection
- Marketing
- International collaboration

COUNTRY'S ECONOMY

Year	GDP		Agricultural Growth (%)	Manufactural Growth (%)	Consumption per capita (kgs)
	(%)	(billion US\$)			
1991	8.5	82.79	6.5	11.7	118
1992	8.1	89.49	6.0	11.3	146
1993	8.3	96.89	-1.9	11.1	158
1994	8.7	105.42	5.5	9.3	198
1995	8.6	114.46	4.1	11.4	203
1996	8.1	123.34	3.5	10.5	215
1997	8.4	133.70	4.3	11.6	243
1998	8.4	144.93	4.0	13.6	261
1999	8.4	157.11	3.7	14.8	282
2000	8.4	170.30	3.4	16.2	301

IMPORT OF STEEL PRODUCTS

Year	Raw material	Flat products	Semi-finished products	Others
1991	597 039 9.11%	3 128 008 47.73%	891 557 13.61%	1 936 258 29.55%
1992	1 047 267 12.83%	3 468 414 42.49%	1 223 831 14.99%	2 422 908 29.68%
1993	1 616 365 18.52%	3 761 283 43.10%	1 167 081 13.37%	2 182 886 25.01%
1994	1 407 904 12.95%	3 613 052 33.23%	3 209 350 29.52%	2 642 031 24.30%
1995	1 384 244 11.53%	4 708 293 39.22%	3 428 112 28.55%	2 485 537 20.70%
1996	1 409 000 10.86%	4 720 000 36.39%	4 100 000 31.61%	2 740 000 21.13%
1997	1 634 000 11.40%	5 050 000 35.23%	4 800 000 33.49%	2 850 000 19.88%
1998	1 951 660 12.31%	5 400 000 34.07%	5 500 000 33.70%	3 000 000 18.93%
1999	2 294 000 13.25%	5 700 000 32.91%	6 200 000 35.80%	3 125 000 18.04%
2000	2 450 000 13.14%	6 050 000 32.44%	6 900 000 37.00%	3 250 000 17.43%

STEEL TRADE STATISTICS (TONS)

Year	Production	Import	Export	Consumption
1991	2 426 000	6 553 670	242 044	7 077 970
1992	3 069 000	8 162 639	236 556	8 786 593
1993	3 532 000	8 727 675	397 256	9 509 916
1994	3 453 000	10 871 843	442 152	11 917 751
1995	5 610 000	12 005 588	1 577 552	12 185 278
1996	5 650 000	13 380 000	1 450 000	13 950 000
1997	6 300 000	14 750 000	1 730 000	15 200 000
1998	7 000 000	16 180 000	2 050 000	16 600 000
1999	7 900 000	16 400 000	2 300 000	18 000 000
2000	8 300 000	18 800 000	2 690 000	19 200 000

STEEL DEMAND/SUPPLY RELATIONSHIP (TONS)

ITEM		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Structural steel	production	1 412 000	1 921 000	2 386 000	1 604 000	2 249 000	2 650 000	2 850 000	3 050 000	3 340 000	3 440 000
	consumption	3 539 174	4 741 091	3 472 113	4 095 160	4 527 509	4 600 000	4 840 000	5 080 000	5 340 000	5 570 000
HR Flat steel	production	-	-	-	540 000	1 237 000	1 800 000	2 400 000	3 000 000	3 600 000	4 230 000
	consumption	2 731 916	2 988 082	3 156 199	3 582 179	4 114 682	4 300 000	4 660 000	5 000 000	5 330 000	5 660 000
Coated steel	production	380 000	499 000	576 000	762 000	773 000	860 000	910 000	940 000	970 000	980 000
	consumption	846 953	750 764	889 050	1 138 910	1 202 344	1 300 000	1 400 000	1 520 000	1 620 000	1 730 000
Pipe & Fitting	production	-	-	730 000	990 000	1 350 000	1 640 000	1 960 000	2 260 000	2 570 000	2 880 000
	consumption	124 998	165 501	222 684	381 220	1 323 709	1 350 000	1 400 000	1 510 000	1 670 000	1 800 000

IMPORTED TAX AND SURCHARGE FOR STEEL PRODUCTS

PRODUCT	IMPORTED TAX (%)	SURCHARGE (%)
Raw steel products and Ferro-alloys (pig iron, scrap, sponge iron)	1	-
Crude steel (ingot, billet, slab and bloom)	5	-
Heavy plate/large section	4	16
CR/HR flat products	3/10	-
Structural steel (bar and section)	10	-
Stainless steel sheet	1	9
Wire rod (drawing)	17	3
Wire rod (mesh)	10	10

STEEL TRADE ISSUES

STEEL TRADE OVERVIEW

BY

MR. PETER AVERY
PRINCIPAL ADMINISTRATOR, OECD SECRETARIAT

The principal objective of this presentation is to provide an overview of steel trade flows over the past ten to fifteen years. The overview can be relatively brief, as four excellent background papers have already been submitted for this session by delegates from the United States, Chinese Taipei, Japan and the Republic of Korea, and there has already been considerable discussion of a number of trade-related issues during the first session of the Workshop.

First, some statistics. How important is steel trade? According to a recent report by the World Trade Organisation, iron and steel exports (including pig iron and ferroalloys) totalled some \$118 billion in 1994. This represented 2.9 per cent of total world exports of all merchandise -- as compared to 3.8 per cent in 1980.

While its overall importance in world trade may have declined, trade has become more important to the steel industry, particularly during the 1990s. As can be seen in Table 1, world steel exports² more than doubled between 1975 and 1995. In doing so, the share traded increased from 22.5 to 35 per cent. For most of the period, which is to say, from 1975 to 1990, the share of steel traded rose rather slowly, with relatively little variation from year-to-year. In contrast, the period 1991 to 1995 was one of extremely high growth, with exports increasing their share of production from 25 to 35 per cent.

Can this pace be maintained? Our analysis at the OECD suggests that it will not, at least during 1996 and 1997. World steel production will increase, but exports will decline both on a quantitative basis and, as a result, as a share of production.

Table 2 provides trade information on a geographic basis. It shows that Western European countries were by far the largest steel exporters in 1995, accounting for 42 per cent of the world total, which is down from 51 per cent in 1990. The Asia-Pacific region was the second largest exporting area, accounting for 23 per cent of world exports, which is several percentage points higher than in 1990.

As for the outlook for 1996 and 1997, the table shows trade easing in most areas during 1996, and that declines will most likely outweigh increases in 1997. Much of the decline can be attributed to rising domestic consumption in many markets, which will lessen the incentive to export. Further information on the reasons underlying these changes is contained in the report that was distributed on *The Steel Market in 1995 and the Outlook for 1996 and 1997*.

2. Data on exports and imports include intra-EU trade.

Information on the structure of steel imports is contained in Table 3. It shows that steel imports by Asian-Pacific countries more than doubled between 1990 to 1995, and that their share of total imports increased from 25 to 39 per cent. Imports by Western European countries, the second largest import area, fluctuated during the six years, rising to 89 million tonnes in 1995, which accounted for 38 per cent of world imports.

The statistics, however, only tell part of the story. In reviewing trade developments over the past several years it is interesting to note that sizeable shifts that have occurred in steel trade flows over relatively short periods of time. In the case of the People's Republic of China, for example, steel imports surged from 8.5 million tonnes in 1992 to a record 36 million tonnes in 1993, then fell by more than 50 per cent in 1994 and 1995, during which steel exports rose to a record level of 8 to 9 million tonnes.

The same sort of situation occurred in the United States, where steel imports rose by more than 50 per cent in one year, to a record 27 million tonnes, then eased in 1995, while exports rose by 85 per cent, to 6.4 million tonnes, the highest total, we have been told, in 55 years.

In the case of the European economies in transition, wholesale shifts have occurred in steel trade patterns during the 1990s, a point which was discussed earlier in this meeting. Central and eastern European countries have been exporting over 50 per cent of their production in recent years, largely to Western Europe and the Asia-Pacific area. Previously much of their trade had remained within the transition area. The shifts have been even more notable in the case of the economies comprising the former Soviet Union, where the shift has been accompanied by a sharp rise in exports. This point was covered in detail in the presentation made earlier on the situation in Russia. As with the central and eastern European countries, a high proportion of the exports has been shipped to Western Europe and the Asia-Pacific area. When the Asian-Pacific market began to ease, however, shipments quickly shifted to North America, where Russia emerged quite suddenly as a leading source of steel imports.

Finally, in Western Europe, net exports from the European Union's twelve countries surged from the 10 to 12.5 million tonne level during 1990-1992, to 22 million tonnes in 1993, before falling back to 8 million tonnes in 1995.

The question is, are these sorts of shifts isolated incidents, or are they characteristic of what we can expect in the years to come? With trade being liberalised in many countries, will volatility in steel trade increase, or are there factors that will tend to stabilise trade? It is difficult to say. Certainly factors such as exchange rates, the expanding role of minimills in some areas, new technology -- such as the strip casting mentioned earlier, and issues related to energy and the environment will have an effect on trade, but in what ways?

Finally, there is the matter of the multilateral trading system itself. It has been strengthened significantly as a result of the Uruguay Round agreements. How will steel trade, which has been subject to many GATT-related actions and informal "grey-area" measures in the past, be affected? It of course remains to be seen. What seems clear is that steel trade remains a sensitive issue, and that steel trade developments are currently receiving increased attention in a growing number of countries around the world. The reports that have been prepared for the Workshop on developments in non-Member economies provide more information on this.

Table 1. **World steel production and world steel exports, in finished steel equivalents, 1975, 1980, 1985 and 1990-1995, and the outlook for 1996 and 1997**

Year	Production Millions of metric tonnes	Exports	Exports/production Per cent
1975	510.5	114.7	22.5
1980	588.8	140.6	23.9
1985	616.8	171.0	27.7
1990	677.6	170.3	25.1
1991	649.0	175.8	27.1
1992	638.9	195.0	30.5
1993	648.7	218.3	33.7
1994	649.0	223.9	34.5
1995	671.3	235.4	35.1
1996	678.4	223.7	33.0
1997	703.4	221.3	31.5

Sources: Data for 1975-1994 based on statistics of the International Iron and Steel Institute. Data for 1995-1997 based on estimates made by the OECD Secretariat (see *The Steel Market for 1995 and the Outlook for 1996 and 1997*).

Table 2. **World steel exports, by area, 1990-1995 and the outlook for 1996 and 1997**

Exporting area	1990	1991	1992	1993	1994	1995	1996	1997
Thousands of metric tonnes								
North America	9 472	11 929	10 757	11 005	9 742	13 900	13 200	11 600
South America	12 864	13 984	14 613	14 696	14 043	13 400	11 900	13 400
Western Europe ¹	87 493	90 823	90 465	95 418	101 418	98 900	97 900	95 900
Central and Eastern Europe	14 524	11 415	12 266	15 792	17 379	18 700	1 000	18 100
Former Soviet Union	8 480	6 354	19 219	29 176	29 827	31 700	30 200	27 300
Asia-Pacific	32 716	37 017	41 597	46 324	46 215	53 500	47 200	49 700
Africa and Middle East	4 767	5 268	6 067	6 022	5 303	5 300	5 300	5 300
Total	170 316	176 790	194 984	218 433	223 927	5 400	223 700	221 300

1. Including internal EU trade.

Sources: Data for 1990-1994 based on statistics of the International Iron and Steel Institute. Data for 1995 based on estimates made by the OECD Secretariat.

Table 3. **World steel imports, by area, 1990-1995**

Importing area	1990	1991	1992	1993	1994	1995
Thousands of metric tonnes						
North America	20,588	19,844	21,303	23,633	36,695	30,100
South America	2,117	2,943	3,640	3,145	3,172	4,300
Western Europe ¹	74,469	73,464	75,285	66,245	78,012	88,900
Central and Eastern Europe	5,540	1,418	2,012	3,971	4,133	5,300
Former Soviet Union	7,060	4,610	5,458	4,786	5,081	5,100
Asia-Pacific	40,308	51,475	55,782	93,272	83,671	89,200
Africa and Middle East	12,275	11,934	14,343	12,719	7,921	8,300
Total	162,357	165,688	177,823	207,771	218,685	231,200

1. Including Internal EU trade.

Sources: Data for 1990-1994 based on statistics of the International Iron and Steel Institute. Data for 1995 based on estimates made by the OECD Secretariat.

STEEL AND THE INTERNATIONAL TRADING SYSTEM

BY

**MS GORDANA S. EARP
DEPUTY ASSISTANT UNITED STATES TRADE REPRESENTATIVE FOR INDUSTRY**

Introduction

Mr. Chairman, members of the Committee, and honored guests, it is a pleasure to be able to participate in this very useful and educational Workshop. I will talk briefly about steel in the context of our international trading system. I will touch on the benefits the Uruguay Round of trade liberalisation has had for the steel industries. I will also discuss the ongoing attempts to forge international consensus toward a Multilateral Steel Agreement, a sectoral, plurilateral agreement under the WTO, under which participating countries would agree to a higher level of trade discipline than is otherwise provided for. We firmly believe that this type of agreement would bring with it increased prosperity for those participating.

For many years, the steel sector has been at or near the epicenter of trade friction. Steel has traditionally been an important sector in countries' emergence as industrial competitors in the world market. The traditional importance of the sector, the pressure for restructuring and downsizing less effective facilities, and the intense price competition, have made the sector a prime candidate for government assistance, be it through trade protection, or government subsidies.

There are some hopeful signs that this type of governmental interference may be less common in the future. Substantial restructuring has taken place world-wide and privatisation has become a common occurrence. Relatively healthy demand for steel in North America and in Asia in particular have resulted in high effective capacity utilisation globally in the last several years. New technology and marketing and just in time delivery techniques have transformed the nature of the steel business. Capital required for a greenfield minimill investment is a fraction of what an upstart used to cost. Globalisation trends through international joint ventures and mergers have increased international trade. These signs indicate that steel may have entered, or at least has the potential to enter, the mainstream as a commodity which is traded heavily, based on competitive advantage.

On the other hand, old habits die hard, and signs of danger persist as well. Examples of government assistance still abound, be it in protecting existing producers, or in supporting new investment. In 1994 the European Union granted billions of dollars in assistance to some of its least efficient producers; promises of downsizing made in return have not been fulfilled. The lingering overcapacity and reluctance to allow market-based restructuring have left less room for imports, forcing the EU to seek quotas on imports from countries in the CIS. This in turn has exacerbated problems with overcapacity in that region. It is very important to allow inefficient companies to close down shop and to reduce lingering overcapacity. By the same token, new capacity should be market-, not policy-, driven.

Based on the OECD Steel Committee report, it is expected that 156 million tons of new steel making capacity will come on line globally between now and the year 2000. We have to ask ourselves to what extent these investment decisions are market driven, and to what extent they are driven by other considerations.

I acknowledge here that greenfield investment is also taking place in the United States, and that some of our local governments have provided incentives, such as tax deferments, to attract such investment to their particular states. But I would draw an important distinction between this type of incentive, and a subsidy provided by the central government or the central bank. The latter reflects a government industrial policy decision to help finance increased capacity. In the United States, the private sector alone made the decision to invest; some of the States simply vied to attract this investment to their locality. While I believe this is an important distinction, I would also note that the United States supports prohibiting all types of assistance to steel producers which under the WTO would be considered a subsidy.

With old excess capacity in the wings, and substantial new capacity coming on line, it is quite possible that intense price competition will increase, giving rise, again, to trade disputes.

Uruguay Round

Some progress has been achieved toward improved multilateral steel trading rules in the Uruguay Round negotiations under the GATT. Twenty countries, including the United States, the countries of the European Union, Japan, Korea, Canada and Australia agreed in that forum to eliminate, over a ten year period, all tariffs on steel. This will further facilitate and stimulate international trade to the benefit of both steel producers and users. Some countries have chosen to lower but not remove steel tariffs, while others continue to protect their industries with high tariffs against international competition. As always, high tariffs are a costly alternative which delays necessary restructuring and increases user costs; we hope that the remaining countries will follow suit and join the tariff-free international steel trading community. The Uruguay Round has also clearly banned any grey area measures, such as voluntary export restraints, trigger price mechanisms, or any other kind of restraint, not directly justified under given WTO rules and procedures.

Not only has trade in steel increased due to the lowering of tariffs, thus directly benefiting steel producers, but removal of trade barriers under the Uruguay Round for a number of steel using industries has also stimulated trade in those sectors and, in turn, steel usage and indirect trade. In short, the trade liberalisation already accomplished through the Uruguay Round has been good for steel companies and their workers.

The Uruguay Round also affirmed the use of tools such as antidumping and countervailing duty procedures to protect against injury from unfairly traded goods, if done in a transparent manner consistent with WTO rules and procedures. The dispute settlement mechanism under the WTO was also strengthened to ensure that panel decisions are adopted and implemented. And finally, the new WTO will not ignore anticompetitive practices. Exclusionary practices which keep out foreign goods can be prosecuted under the WTO, and countries, including the United States, have already brought cases to remove some such practices in other products areas.

This is a new trading environment which already has, and will continue to have positive effects for those who actively participate in it. It would stand to reason that building further on these trading rules and liberalisation's would bring further benefits.

Multilateral Steel Agreement

Over the last six years, many steel producers have aspired to even higher disciplines than those achieved under the WTO. In 1989, the United States proposed negotiation of a Multilateral Steel Agreement (MSA), under the GATT, which would become a model for free and fair trade, based on competitive advantage.

The central objective of such a multilateral agreement would be to discourage government interference with market forces through subsidisation or other protection, to open markets, and to afford an efficient and speedy dispute settlement mechanism. It is also hoped that, if competition is based on competitive advantage without government meddling, trade friction will subside to a minimum. One of the main objectives and legacies of an agreement which would remove the main causes of unfair trade, we firmly believe, would be to minimise the need for use of any type of trade restrictive action.

Although this vision had been endorsed by all the largest steel traders under the GATT, it has yet to become a reality. Views will differ on the main reasons for our failure to reach final agreement, and it would not be productive to try to apportion blame.

Instead, we may want to ask ourselves: would we be better off today, had we entered into an agreement banning subsidies in 1992 (when the agreement was first due to be completed)? How many billions of dollars in subsidies would have stayed in government treasuries or in taxpayer pockets? Would old capacity have been rationalised more quickly, and would less capacity be coming on line? Even companies who benefited from these subsidies must realise that, while they benefited in the short term, the long-term benefits are questionable for two reasons: 1) their competitors may have gotten a better deal, and 2) global overproduction will suppress the price and hurt their profits. If given the choice of getting government assistance or giving up the assistance in exchange for a guarantee that their competitors world-wide will also forego such assistance, I believe producers would chose the latter. Certainly the choice for the governments should be clear.

Our efforts to conclude a comprehensive MSA have so far faltered on one important issue. Should the agreement be prospective, or should steps be taken to forgive past transgressions? While this issue continues to be debated among carbon producers, the specialty or stainless steel producers in the United States and Europe have managed to build consensus, and have made recommendations to their respective governments on the terms of a Multilateral Specialty Steel Agreement. The key breakthrough has been agreement by the U.S. specialty steel producers, represented by the Specialty Steel Industry Association of North America, or SSINA, to voluntarily undertake to forgive old subsidies granted in Europe, in the sense that they would agree not to file countervailing duty cases against these under US law. The industry recommendations are by and large acceptable to us, and we understand to the EU as well, although some details remain to be worked out.

We are prepared to enter into an agreement which is more limited in scope. Although specialty steel production accounts for only 15 million tons or 2 per cent of world raw steel production, it represents nearly 10 per cent of value, and is growing in importance, servicing key industries such as automotive, aerospace, tools and defense. We believe that conclusion of an MSSA would be valuable in itself, but could also become a useful model for the steel industry more broadly, although some changes may be needed to ultimately accommodate participation by all steel producers.

Attached for your information is an outline of the proposed MSSA prepared by the SSINA. Key elements are as follows:

- a prohibition on all subsidies with four limited exceptions;
- guarantees of free trade, except when legitimate safeguards instruments under the WTO are invoked;
- agreement that anticompetitive practices will not be supported by governments;
- expedited dispute settlement procedures;
- a voluntary industry undertaking not to file CVD cases against subsidies granted prior to 1990, or against subsidies granted between 1990 and 1995 which are notified under the MSSA;
- a bilateral consultation mechanism, in addition to the multilateral mechanism under the MSSA, which will encourage transparency and dialogue on market conditions, implemented consistent with international and domestic obligations; and
- continued access to unfair trade laws, except as voluntarily restricted.

The United States and the European Union have agreed to expedite our bilateral discussions on the terms of such an agreement, and to enter as soon as possible into plurilateral discussions with other interested countries. We hope to discuss these issues with all governments and stainless steel industries represented here, and hope for your support and participation. We would welcome every country in this room to such an agreement.

Conclusion

In short, progress is being made toward creating a multilateral trading environment conducive to free and fair steel trade. More work needs to be done, and conclusion of a Multilateral Specialty Steel Agreement appears to be an attractive next step. We look forward to making further progress toward that objective in the near future, and to discuss these ideas with you in the coming year. Thank you for your attention and for the invitation to share these thoughts with you.

OUTLINE OF PROPOSED MULTILATERAL SPECIALTY STEEL AGREEMENT

OBJECTIVE

The proposed Multilateral Specialty Steel Agreement (MSSA) is designed to ban steel subsidies and other practices that distort international trade in specialty steel. Toward that end, the MSSA establishes limitations on subsidies and other anticompetitive practices that extend beyond those provided in the international code on Subsidies and Countervailing Measures (SCM) of the World Trade Organisation (WTO). Application of these principles in the international specialty steel marketplace should restore the disciplines of the free enterprise system and thus prevent the injury that is caused by reliance on government subsidies and other trade-distortive practices.

SUBSIDIES DISCIPLINE

The MSSA would prohibit most subsidies to specialty steel production and permit parties to seek cessation of a subsidy whether or not the subsidy causes injury to producers. Subsidies for persons in disadvantaged regions that are permitted by the SCM would not be permitted by the MSSA. Assistance for research would be limited to not more than 35 per cent of the costs for industrial research and 25 per cent of costs for precompetitive development activity (as compared to 75 per cent and 50 per cent, respectively, under the SCM); environmental assistance would be limited to 15 per cent of the cost of adaptation in the MSSA, as compared to 20 per cent in the SCM.

The MSSA would also permit parties to take action against extraterritorial subsidies, i.e., subsidies granted by a government to companies located in other countries. Under the SCM, action may only be taken against a subsidy provided by a government to a company within its national borders. Given the increasing number of companies located outside of their home markets that receive subsidies, this provision is a significant improvement over the SCM.

The MSSA will recognise that limited subsidies directed at rationalisation and elimination of excess capacity for specialty steel production are acceptable.

Thus, assistance for workers who lose retirement benefits or are terminated due to the curtailment of production or bankruptcy, and assistance for closure of a specialty steel facility, would be permitted by the MSSA.

In addition, under the "grandfather" provisions, all subsidies received prior to January 1, 1990, will be permitted, and subsidies granted between January 1, 1990 and December 31, 1995, will be permitted if the subsidy is listed in the MSSA Appendix. This provision recognises that subsidies already granted cannot be readily cancelled, but prohibits future subsidies. Companies will also enter separate undertakings not to file cases under domestic laws against subsidies permitted by the MSSA. Outstanding antidumping and countervailing duty orders, however, will not be affected by the MSSA.

Temporary derogations from the MSSA for future subsidies may be authorised under limited conditions, primarily for countries in transition and developing countries, if the subsidies contribute to structural adjustments to capacity. Parties that suffer adverse effects due to the derogation may be granted the right to offset the adverse effects of that subsidy or measure.

TARIFFS AND OTHER MARKET ACCESS MEASURES

In addition to eliminating subsidies, the MSSA also seeks to achieve free trade in world specialty steel by eliminating tariffs and preventing other measures that distort trade. Tariffs on specialty steel products are to be phased out under the MSSA in equal annual instalments, with duty-free treatment effective as of January 1, 2005. Although many countries are currently phasing out specialty steel tariffs under the WTO Agreement, all MSSA signatories not currently phasing out tariffs would be required to do so.

The MSSA will recognise that market access is a significant issue for companies around the world. In order to promote free and open markets world-wide, the Agreement will prohibit governments from adopting or maintaining a variety of anticompetitive practices. Prohibited practices will include: voluntary restraint agreements or other quantitative restrictions, price controls, discriminatory tax practices, and trigger price mechanisms.

CONSULTATIONS

In an effort to prevent trade distortions, parties may conduct periodic bilateral consultations to discuss matters of concern, such as the parties' steel industries, trade developments, and relevant government programs. All consultations and actions taken pursuant to the consultations must be consistent with the parties' domestic laws, including their antitrust and competition laws. Producers will file letters with their governments committing to inform the government of circumstances that might, over time, cause the producer to seek import relief under domestic laws. Consultations, however, do not affect the right of producers to petition for import relief under domestic laws or the right of parties to act on such petitions.

VIOLATIONS AND REMEDIES

A major advantage of the MSSA, as compared with traditional trade laws, is that the MSSA allows parties to pursue violations of the Agreement immediately, rather than having to wait for subsidised investments to be made and injury to occur. It is anticipated that an effective mechanism to settle international disputes of the type set forth in the MSSA will help to limit trade frictions in the international specialty steel market.

Accordingly, the MSSA would establish a Multilateral Specialty Steel Committee (MSSC), comprised of representatives of each party to the Agreement, to facilitate consultations and address the operations of the MSSA. Parties will be required to notify the MSSC of the provision of any assistance or other measure covered by the Agreement. When parties believe that a violation of the MSSA has occurred, and consultations with the alleged violating party fail, the party may approach the MSSC to review the matter or may request establishment of a dispute settlement panel to resolve the matter. If a violation is found, remedies under the MSSA will include either the collection by the violating party from the specialty steel producer of the amount of the subsidy received, plus interest, or the acceptance of tariff concessions on exports to the complaining party equal to that amount. Failure of the violating party to adhere to such remedial measures could lead to the authorisation of countermeasures by the complaining party.

PERSPECTIVES ON GLOBAL STEEL TRADE ISSUES

BY

PAUL T.Y. HUANG

ASSISTANT VICE PRESIDENT-COMMERCIAL, CHINA STEEL CORPORATION

Introduction

Steel is one of the largest global trade commodities, and it is also the metal that most frequently sparks trade disputes. Therefore, building a set of globally-convincing international trade disciplines to avoid distortion of the steel trade is one of the most thorny issues faced by the world steel industry.

Although the Multilateral Steel Agreement (MSA) is yet to be reached, a partial zero-for-zero tariff agreement was attained in the Uruguay Round talks. Regional trade blocs also work very hard to eliminate intra-regional trade barriers, and the privatisation tide leads to a gradual extinction of government subsidies. Globalisation has led to the vogue for strategic alliances between international enterprises. In view of the global trends, we firmly believe that null government subsidies, zero-for-zero tariffs, and the lifting of non-tariff barriers will be realised some day in the future. As a matter of fact, the latest changes in the global trade environment have profound effects on steel trade structure by steering trade flow into a completely different track. There are growing signs that MSA negotiation will eventually be reached at an opportune time.

The changing trends in Taiwan's steel trade

Asia has become the most dynamic steel trade market in the world. In Taiwan, a small island located toward the center of East Asia, annual apparent steel consumption per capita has surpassed 1 000 KGs. Maintaining a free and open trade market is the major driving force behind Taiwan's economic growth.

1. The openness of the local steel market already matches the OECD standard

Taiwan has become one of the world's most liberalised steel markets since 1987, when it lifted all its steel import restrictions. Without any non-tariff barrier and with an average nominal import duty of 8.1 per cent, Taiwan's real average tariff rate has reached as low as 3.9 per cent, which is very close to the 3.5 per cent of major industrial countries. Consequently Taiwan has become a major net steel importer, ranking among the world's top three since 1990. In addition, Taiwan has agreed, in its negotiations for entry into WTO, to comply accordingly with the zero-for-zero tariff reduction agreement conditional upon the successful conclusion of the MSA negotiation.

Taiwan has suffered from the severe threat of steel-dumping

Heavy domestic demand has induced a flood of imported steel from all over the world. As a result, Taiwan's steel industry has become exposed to the threat of dumping. The EU's limits on steel imports from Eastern Europe especially have forced Eastern Europe to divert a large quantity of steel exports to Taiwan. As a result, the order of the local steel market has been heavily damaged.

The cross-strait relationship and outward movement of industry have altered the patterns of trade flow

Since the opening of indirect trade across the Taiwan Strait, Taiwan's reliance on Hong Kong as an entrepot increased rapidly, as the cross-strait steel trade gradually grew in a complementary and mutually beneficial fashion. However, due to the outward movement of Taiwan's industries and the localisation of raw material procurement, and especially the sudden rises and falls in mainland Chinese steel imports because of constant shifts in policy, the entire Asian steel market, including that of Taiwan, has been shaken up by mainland China.

The ongoing expansion boom is leading to over-supply worries

In recent years, Taiwan's steel mills have aggressively expanded their capacities. Meanwhile, domestic steel demand is entering the saturation stage, as Taiwan's economy experiences medium growth with domestic demand slowing down and industry hollowing. Therefore, there is an oversupply of re-bar, cold rolled and stainless steel now in the local steel market. Once all the present planned expansion projects are completed, Taiwan's steel market may become fully self-sufficient for all kinds of products. At the same time, the steel capacity expansions fuelled by FDI (Foreign Direct Investment) in ASEAN countries and the HR capacity expansion fever among US minimills may suddenly change current net importers of steel into net exporters.

The influence of the Uruguay Round talks on the steel trade

World trade will be further expanded

One of the greatest achievements of the Uruguay Round talks was the large-scale reduction of tariff rates. For some items, a zero-for-zero tariff has even been reached and non-tariff barriers were eliminated. Global trade is anticipated to increase, therefore, and the steel trade will inevitably follow the trend. This may be seen from the growth of global steel exports: 195 million MT in 1992, 217 million MT in 1993, and 226 million MT in 1994. During the same period, global export-to-total production ratios also increased: 31.3 per cent, 34.3 per cent, and 35.7 per cent.

MSA failed to be reached

Because each country adheres inflexibly to its position on subsidies and anti-dumping, the MSA negotiation has not proceeded smoothly. It will thus become very difficult to achieve free world trade in steel.

The Uruguay Round talks have not eliminated the anti-dumping issue

GATT did not establish strict norms on dumping and subsidies, thus leading to the increase in international disputes over the steel trade. Although the Uruguay Round talks resulted in new regulation of dumping and subsidies, each country can still implement these regulation at its own discretion. Without joint efforts by all countries, the disputes over dumping and subsidies will not be resolved.

Regional trade blocs may cause unpredictable effects on world trade

Present efforts among regional trade blocs to eliminate intra-regional trade barriers are in line with WTO goals such as market openness and trade liberalisation. However, inter-regional steel industry alliances can easily be transformed into cartels, leading to inter-regional conflicts over steel trade. Therefore, if WTO can lead regional trade blocs into promoting international co-operation and technology exchange, maintaining an orderly steel market, and addressing the imbalance in inter-regional supply and demand, it will be very helpful for the sound development of the global steel industry.

The dispute settlement system has been enhanced to prevent a proliferation of lawsuits in world trade

The dispute settlement system that was strengthened in the Uruguay Round has already produced some positive effects. For example, the auto trade disputes between the US and Japan last year were successfully resolved under the influence of the WTO dispute settlement system. In July of this year, Japan resorted to WTO against Brazilian controls on auto imports. More recently, Japan is planning to petition WTO again against the Indonesian-Car program. This shows that the WTO dispute settlement system has been efficient and quick in solving global trade disputes and preventing trade distortion.

The effect of MSA on global steel trade

The removal of global overcapacity

Overcapacity has been like a fuse igniting constant international trade disputes, and MSA aims to eliminate subsidies so as to wipe out this redundant steel capacity. The ideal means of solving this problem is two-pronged: stimulate steel demand and reduce steel capacity at the same time. Stimulating demand for absorbing overcapacity will take a long time, while reducing steel capacity seems like a short-cut solution. Theoretically, reducing capacity is the quickest way of restoring the global supply-and-demand balance. However, this kind of shock therapy has undesirable side-effects like unemployment compensation costs, waste of investments, and so on. Therefore, reducing capacity is like building dikes to prevent flooding—it is not the comprehensive solution. The failure of the EU's program to reduce steel capacity because of gigantic political and social pressure is a good recent lesson. A better long-term solution for overcapacity, therefore, is to effectively stimulate steel demand in addition to reducing capacity. IISI's recent efforts to promote new applications for steel, such as replacing wood in residential buildings with steel, and the close R&D co-operation between steel mills and car companies, are good illustrations of practical far-reaching measures. The only shortcoming is that the current overcapacity cannot be eliminated in a short time. At present, the uneasiness in the global steel market comes from the huge exports of Eastern Europe, including Russia and Ukraine. If the Western world could successfully assist those countries' economic development, thereby stimulating their steel demand, the pressures from

global overcapacity will be greatly alleviated. Including those steel exporters in the MSA will present another challenge to the success of MSA negotiation.

Privatisation brings new hope for MSA

Subsidy is one of the bottlenecks in MSA negotiation. Therefore, privatisation is deemed the most direct and effective way to eliminate subsidy. In the past, European state-run steel companies were always the major barrier to the MSA talks. As European steel companies are privatised, this basic difference between the US and the EU will be erased.

The revelation of the MSSA

Although the MSA agreement has not been reached yet, SSINA (Specialty Steel Institute of North America) and EUROFER (European Confederation of Iron and Steel Industry) have taken the lead in striking the Multilateral Specialty Steel Agreement (MSSA). SSINA and EUROFER have indicated that the prohibition of subsidies, and the elimination of tariff and non-tariff barriers will help to achieve the goal of reducing capacity, thereby offering a fair arena for competition among the world's steel mills.

The following are major points in the MSSA:

1. Subsidies of specialty steel are prohibited. Exceptions are strictly limited to environmental protection, R&D, plant closure, and rehabilitation-related social costs.
2. A grandfather clause allows for existing subsidies which are deemed not in violation of the agreement.
3. MSSA strictly forbids anti-competitive measures such as price-fixing.
4. Steel mills promise not to press suit against green-light subsidies.
5. Temporary exemptions are mainly granted to developing and transitional countries, so they can follow the stipulations of the agreement.
6. Governments upholding the agreement should hold periodic meetings to prevent future trade litigation.
7. Subsidy and non-tariff barriers related trade disputes should be arbitrated by a multilateral specialty steel committee organised by governmental representative from countries not involved in the said trade disputes.

It is clear that MSSA has made a breakthrough in the bottleneck facing the MSA. It has reached consensus on subsidies, the Sunset Clause, prior negotiation, and a transitional period for developing countries, thus establishing an excellent model for MSA to follow. If the same agreement could be reached in the MSA, it will exercise far-reaching influence on the global steel trade.

V. Concluding remarks

The seven-year-long Uruguay Round talks finally reached an agreement which amounted to a declaration of the inevitability of global trade liberalisation and the complete opening of markets. However, the failure of the MSA negotiation shows that a balance between market openness and protectionism is yet to be reached in many countries.

Although the Uruguay Round led WTO to the goal of zero-for-zero tariff, the success of zero tariff must still rely on the elimination of non-tariff barriers, which often easily arouses disputes. Therefore, building an effective dispute settlement mechanism is very important. As a matter of fact, just as prevention is better than cure, preventive negotiation is the best answer to trade disputes. During the MSA negotiation process, most countries maintained that there should be a 60-day prior consultation period before an anti-dumping petition is raised, which would allow time for negotiation and prevent global trade from becoming handicapped by a proliferation of lawsuits over trade. Moreover, since there is a definite "Sunset Clause" in WTO regulations, its members should not deliberately avoid it by any excuse.

Considering that MSA is drafting stricter regulations over dumping, subsidies and market access in the international steel trade, it should have a positive influence of fair global trade in steel. However, only a few members of WTO attended MSA negotiation. The most ideal means for MSA to achieve its founding goal is to support fully the accession of non-WTO parties into WTO and to encourage more WTO members to join the MSA negotiation. This would help to make MSA one of the agreements under the WTO framework.

TRENDS IN JAPANESE STEEL TRADE

BY

MR. SHIGETO TANIZAWA
CHIEF MANAGER, EXPORT ADMINISTRATION, KAWASAKI STEEL CORPORATION

1. Overview of Trends after the Plaza Agreement in 1985

Sharp Yen Appreciation(Y240/\$→Y90-110/\$)



- Rapid shift to overseas operations by Japanese steel industry customers. (e.g. electric and automotive industries, etc.)
- Relatively high cost in terms of US dollars.
- Attractive domestic steel prices in terms of US dollars.
- Steel imports double in ten years.
- Steel exports down by one-third.

Import mix changes from commodity grade to higher value added products.



Countermeasure 1: Globalisation.

- (1) To take advantage of the strong yen.

Several billion US dollars were invested in the U.S. facilities in the late 1980s.
Investment in Southeast Asia accelerated in 90s.

- (2) To be a source of supply to domestic customers establishing transplants abroad.



Countermeasure 2: Radical Restructuring.

- (1) Downsizing the workforce.
(2) Consolidation in production facilities.
(3) Cutbacks in capital investment.

→ **Substantial cost savings.**



Result: Return To Profitability

While maintaining our consistent high quality, just-in-time delivery, technical back-up and other services to both domestic and foreign customers.

Our Philosophy for International Trade

- (1) To maintain the free trade principles of the World Trade Organisation (WTO) and its predecessor, GATT.
(2) Not to resort to protectionism.
(3) To rely on multilateral negotiations through the WTO to solve problems.

2. Steel Import Situation In Japan

- Steel imports double in ten years.
- Increased import ratio of commodity grade.
- Total imports in 1995 represent almost 10 per cent of Japanese steel consumption.
- Import mix changes to higher value added products.
- Sharp price cut in Japan in competition with imports.
- Duty Free Importation Policy In Japan.
 1. Support duty free program under a UN/OECD initiative.
 2. No exemption for steel in a generalized system of preferences (GSP) for imports from developing countries.
 3. Current duty free imports wire rod, cold rolled, galvanized : more than 95 per cent Hot rolled, plate: more than 90 per cent.
 4. Three-year early application of duty reduction
Schedule based on the Uruguay Round agreements.

About 90 items of steel products.
- More than 50 countries export to Japan.

3. Steel Export Situation In Japan

- Export about 30 per cent of production in 1970s and early 1980s.
- Gradually declining since the mid-1980s.
- Down by almost half in 1990 from the peak.
- More selective regarding both export markets and specific products.
Key factors:
 1. Heightened economic activity (e.g. Asia).
 2. Location of Japanese transplants.

Fig.-1 Yen Rate

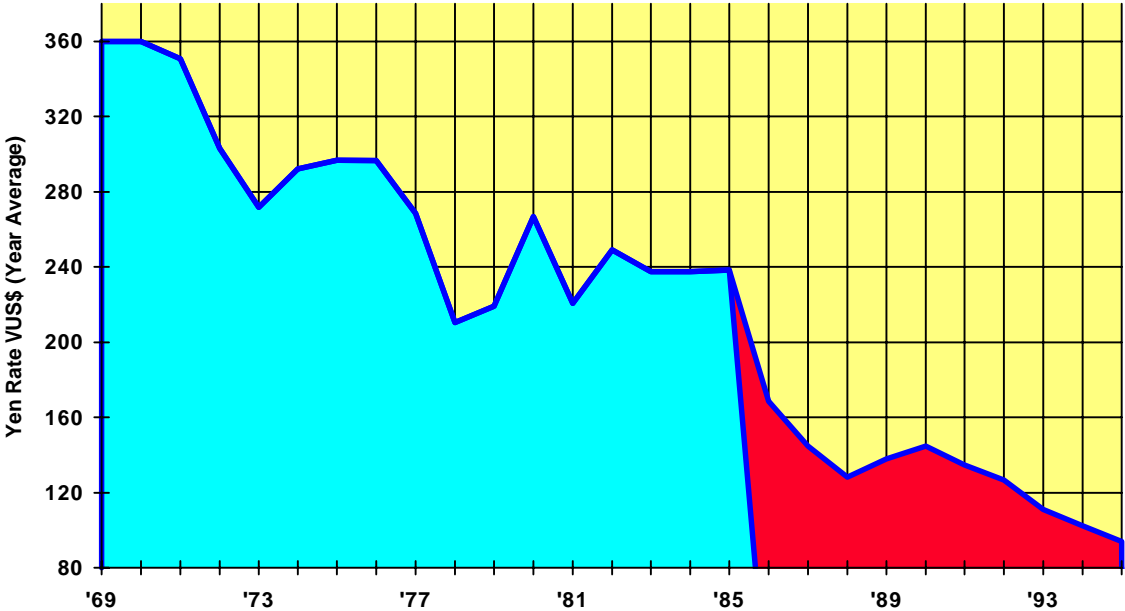


Fig.-2 Imports Double in Ten Years

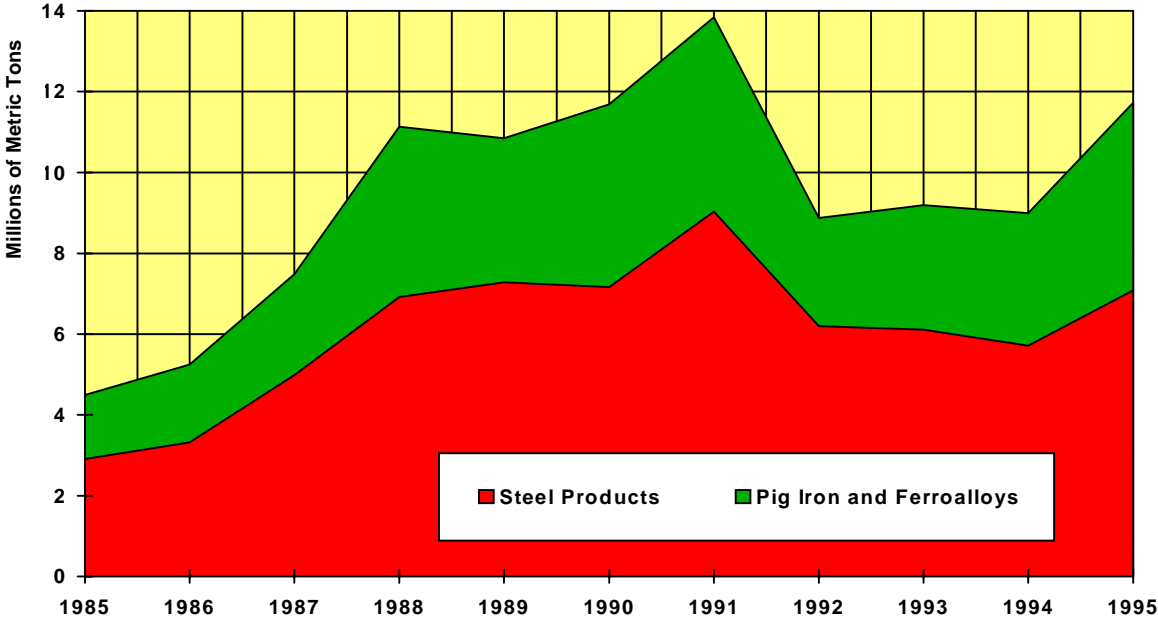


Fig.-3 Exports Down by One-third

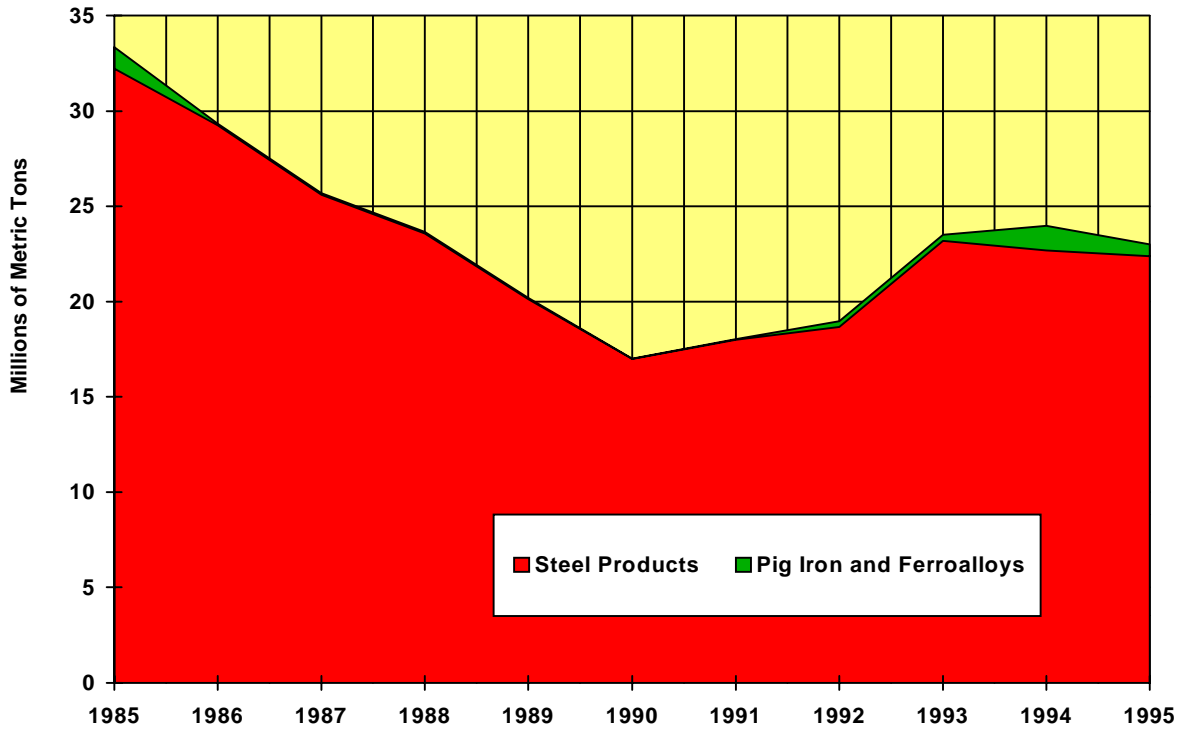
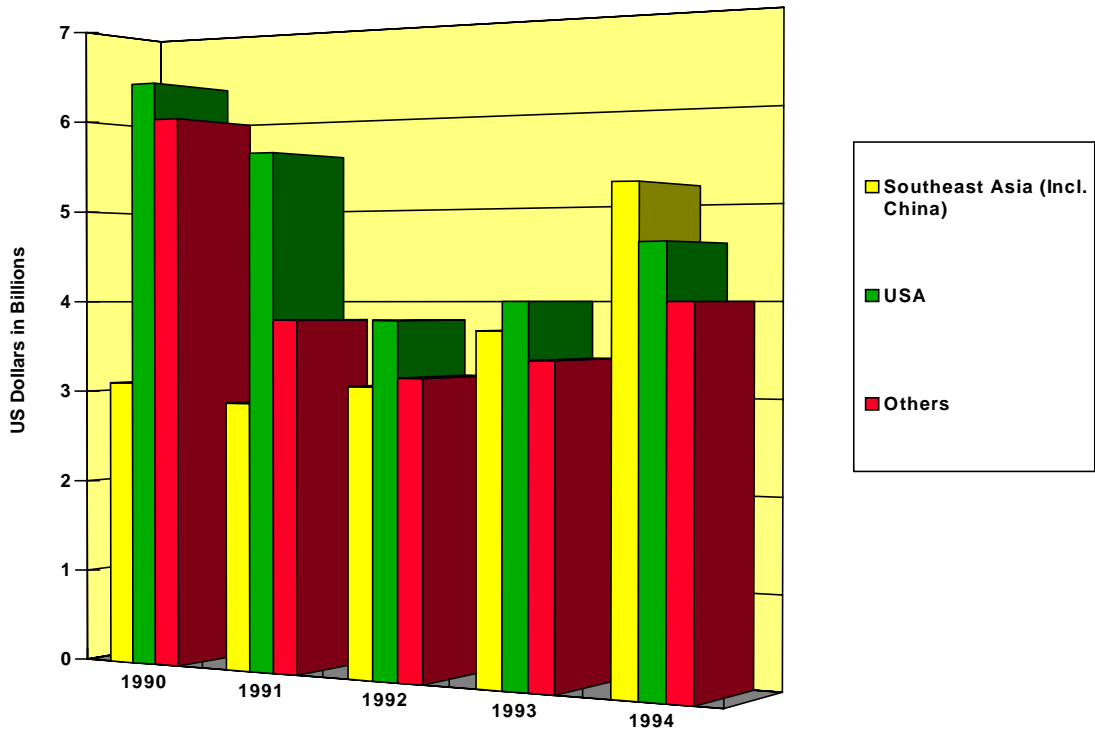


Fig.-4 Japanese Manufacturers' Offshore Investment



Thousand

Fig.-5 Workforce Cutbacks in Japan and U.S.

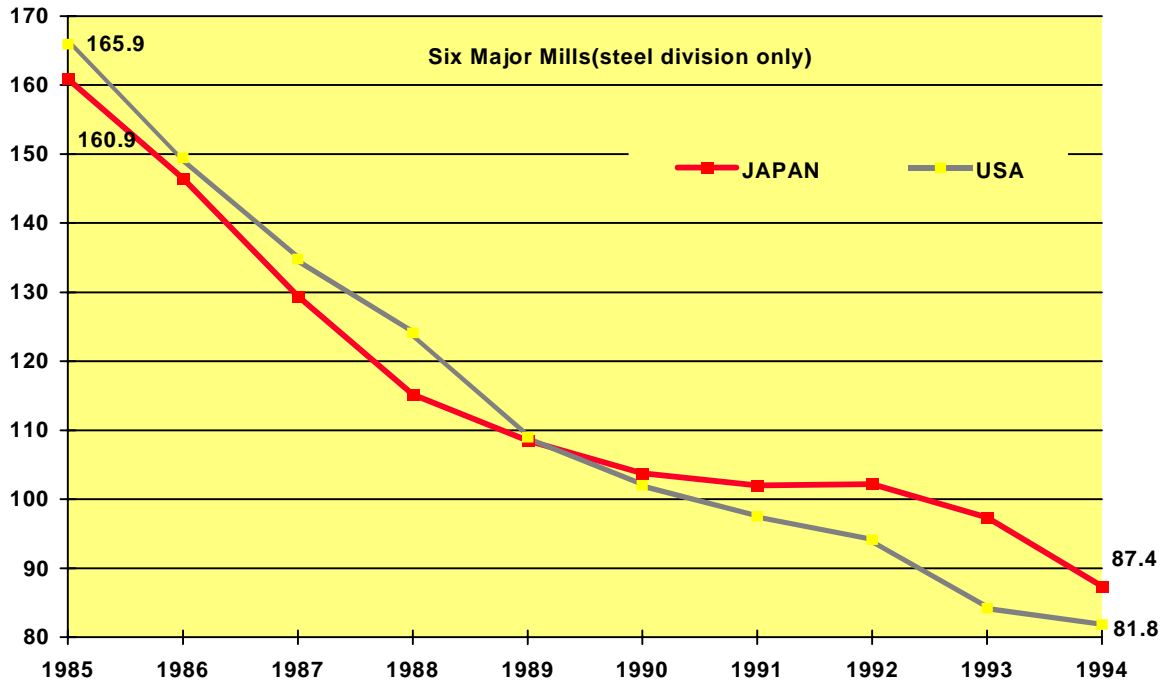


Fig.-6 Productivity Trend of Six Major Steelmakers (steel division only)

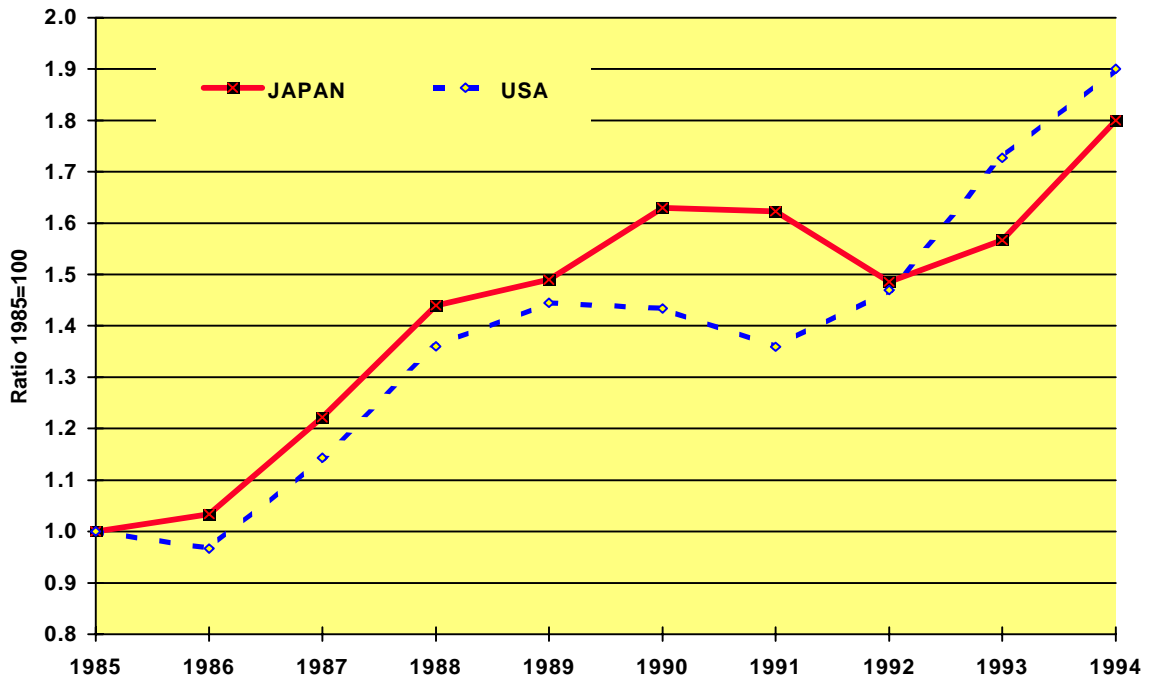


Fig.-7 Japanese Steel Capital Expenditures

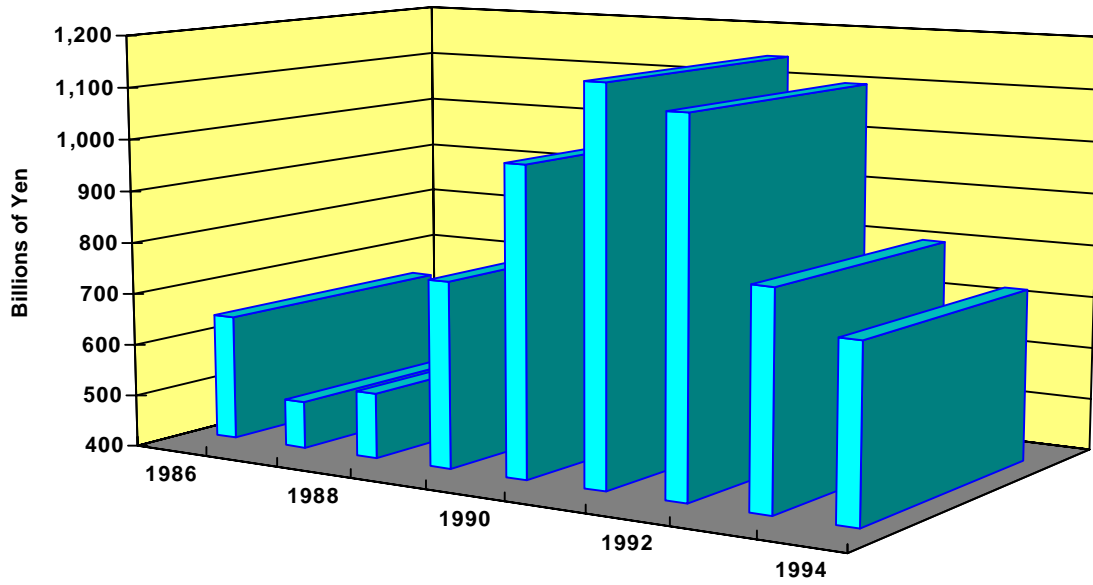


Fig.-8 Pre-tax Income of Japanese Steelmakers

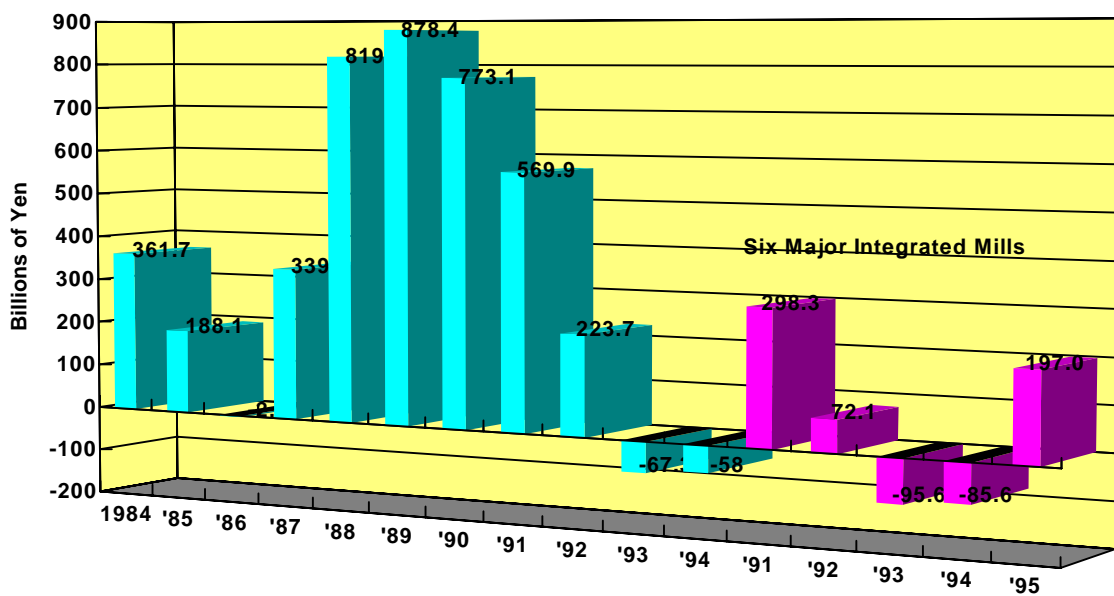


Fig.-9.1 Value-Added Japanese Steel Imports Increasing

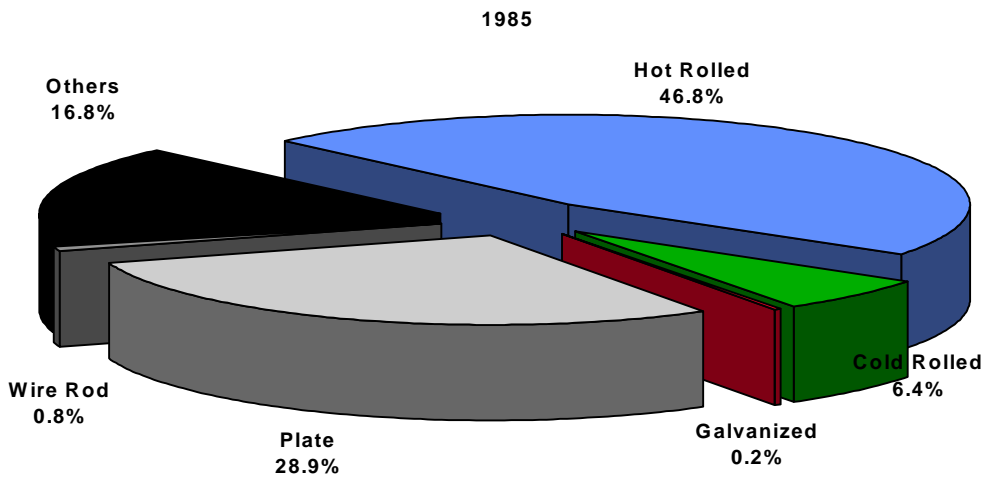


Fig.-9.2 Value-Added Japanese Steel Imports Increasing

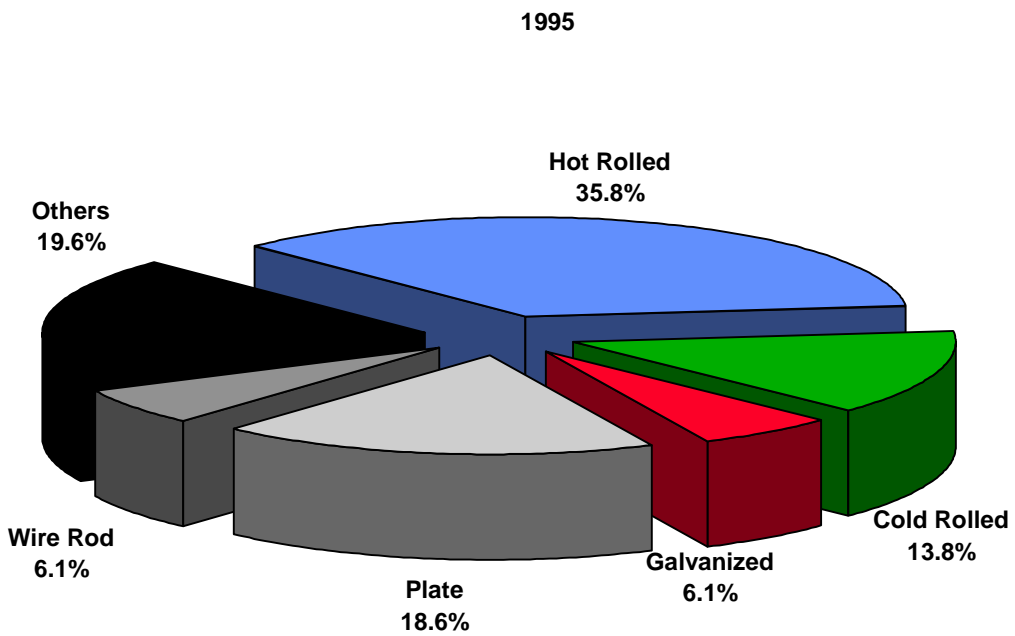


Fig.-10 Import Ratio Trends in Japan

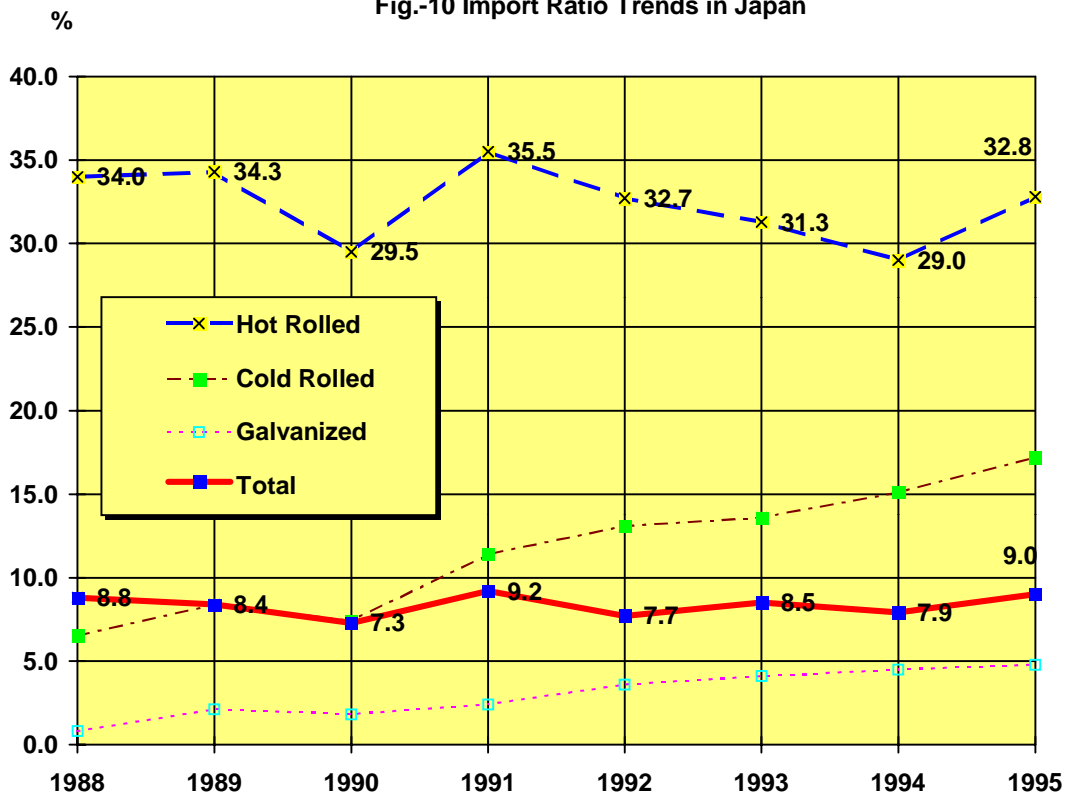


Fig.-11 Hot Rolled Sheet Import

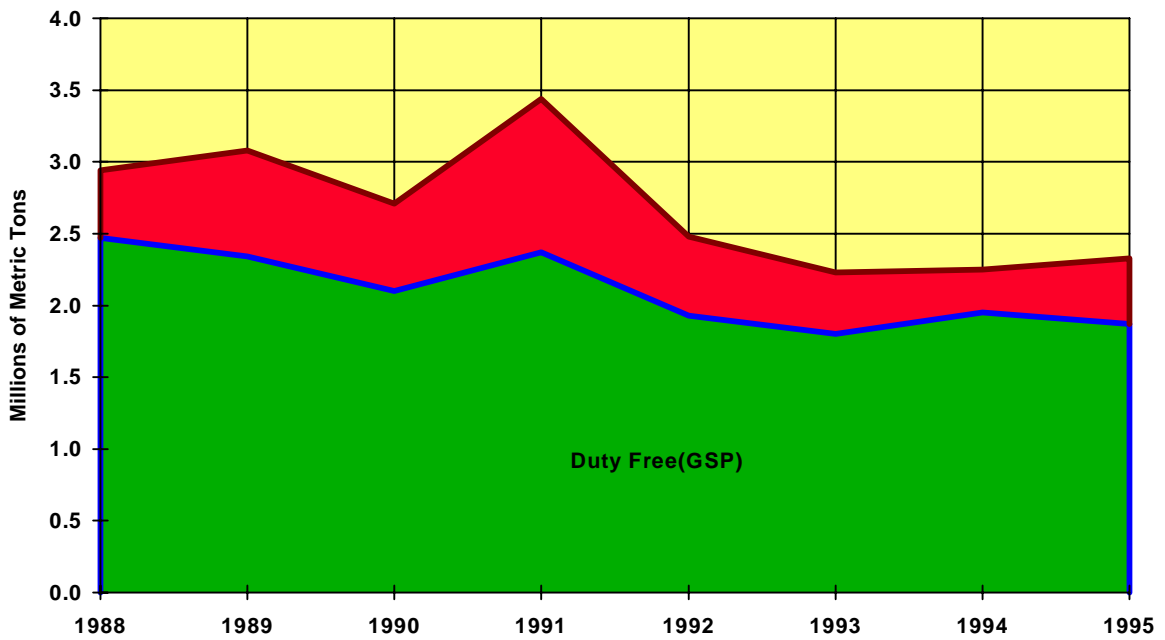


Fig.-12 Cold Rolled Sheet Import

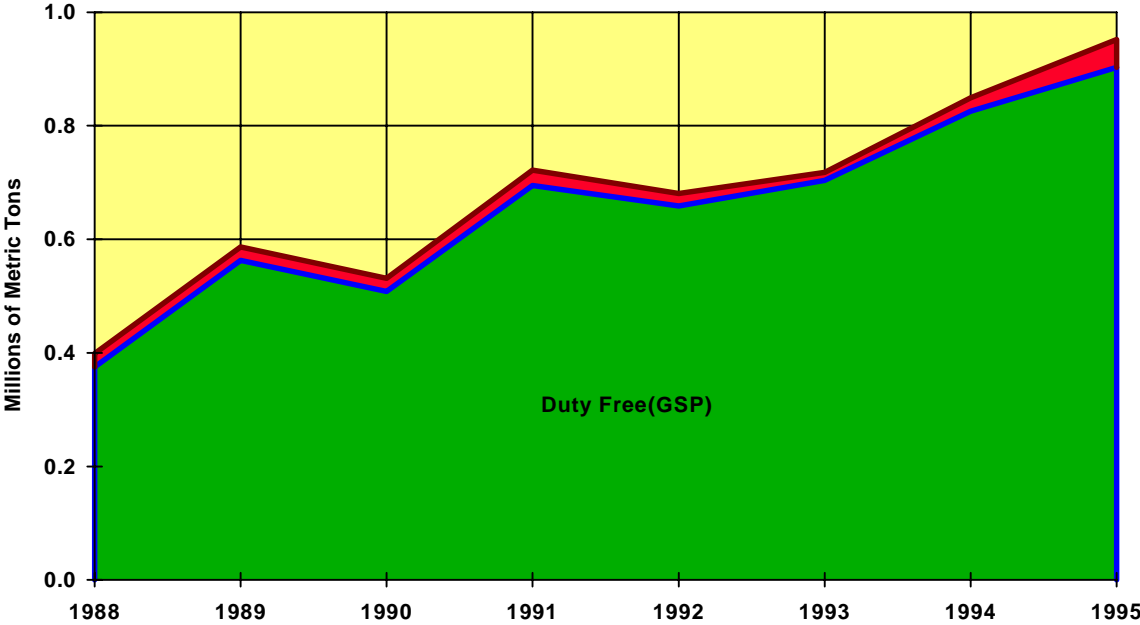


Fig.-13 Plate Import

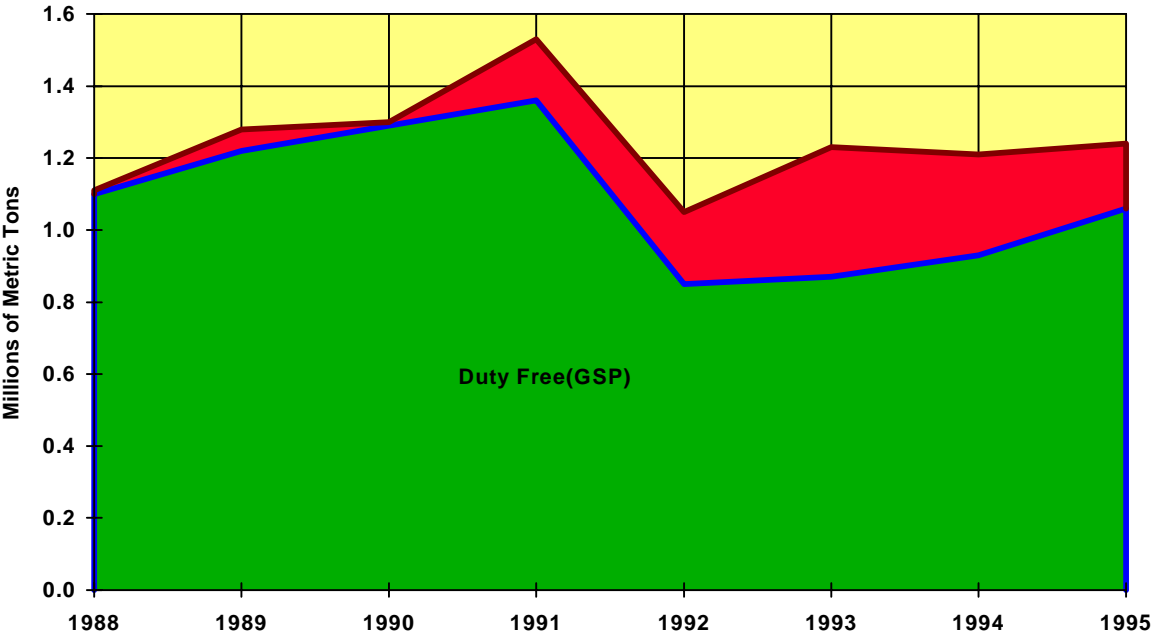


Fig.-14 Galvanized Sheet Import

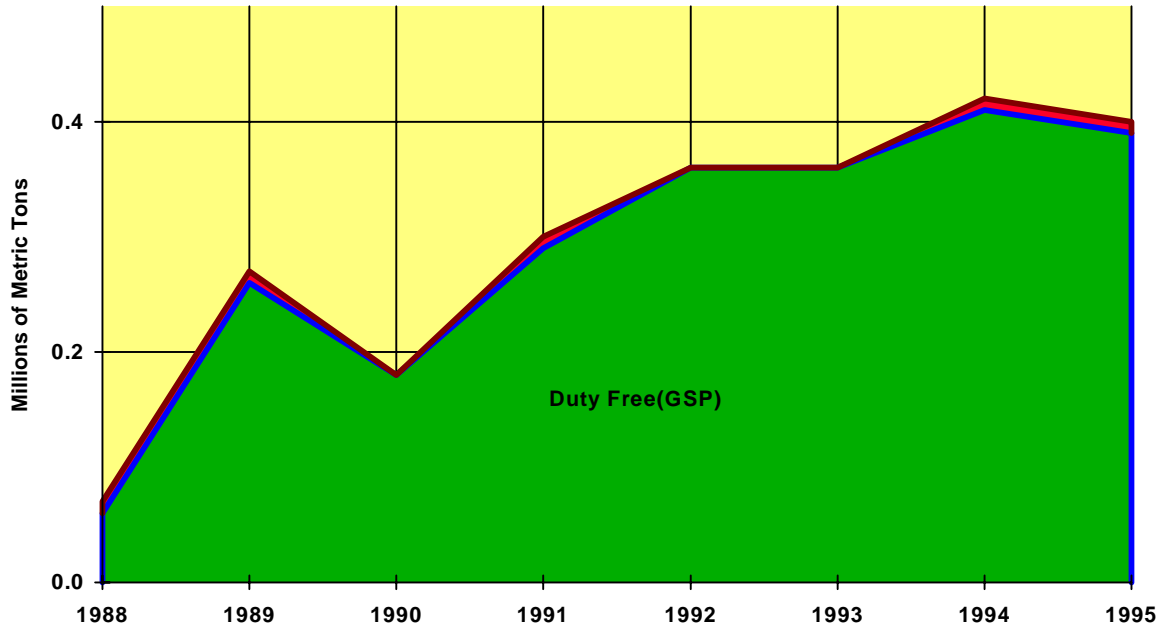


Fig.-15 Wire Rod Import

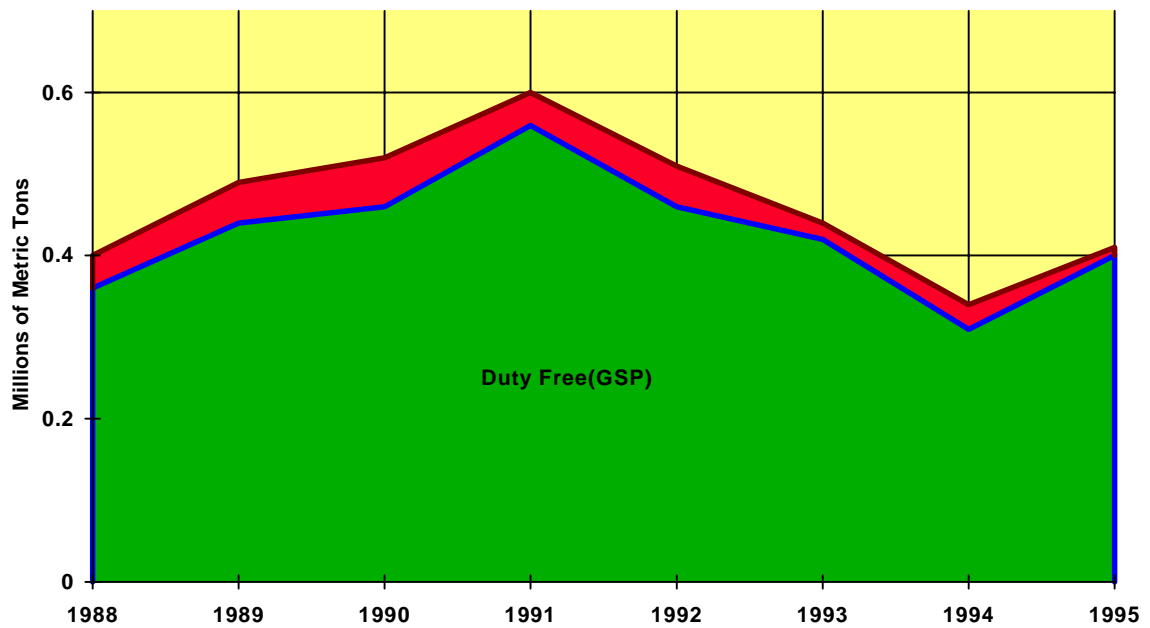


Fig.-16 Three-Year Early Appreciation of Duty Reduction Schedule

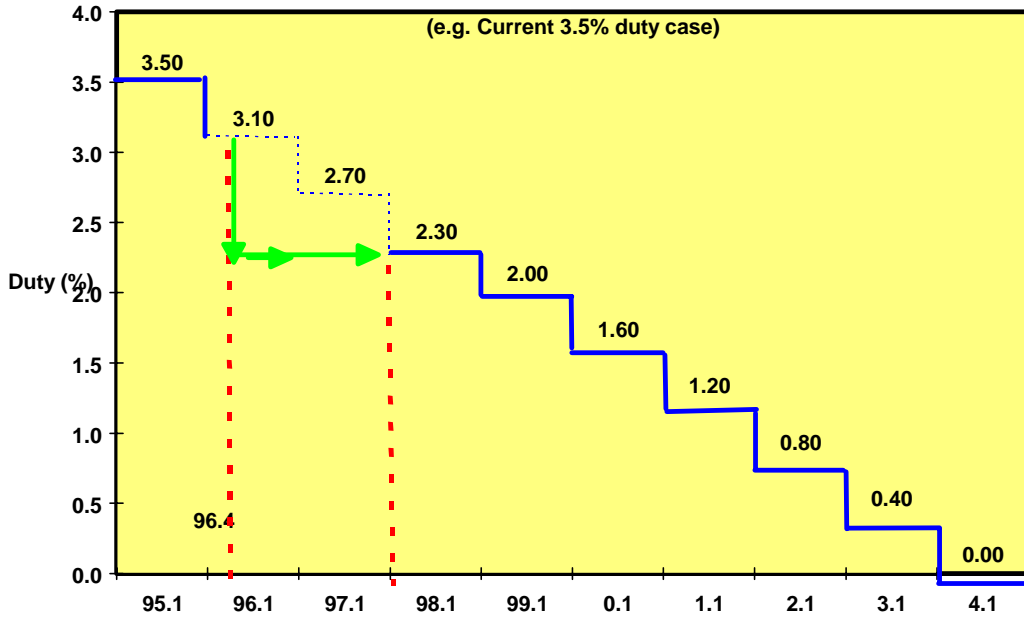


Fig.-17 Japanese Imports Origin in 1995

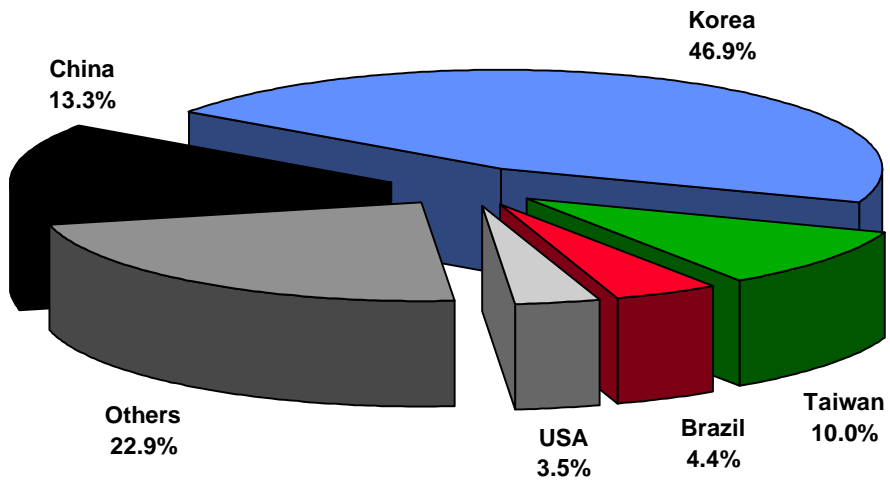


Fig.-18.1 World Steel Exports by Country of Origin in 1974

(97.8 Million Tons)

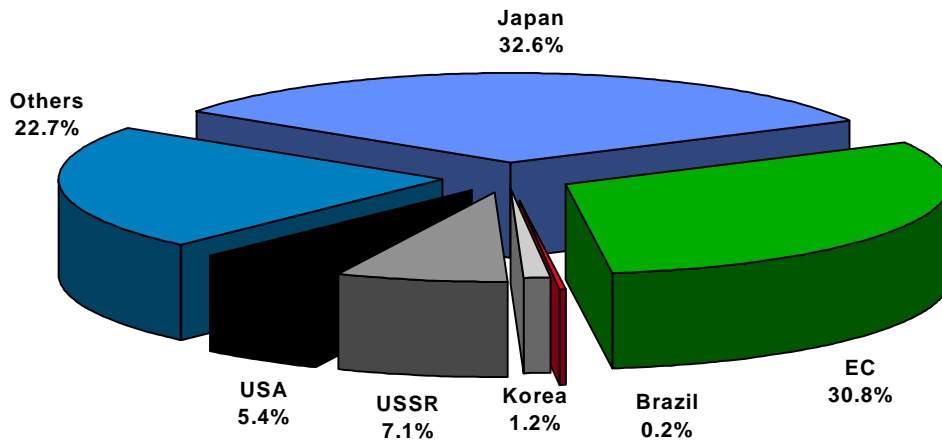


Fig.-18.2 World Steel Exports by Country of Origin in 1994

(159.2 Million Tons)

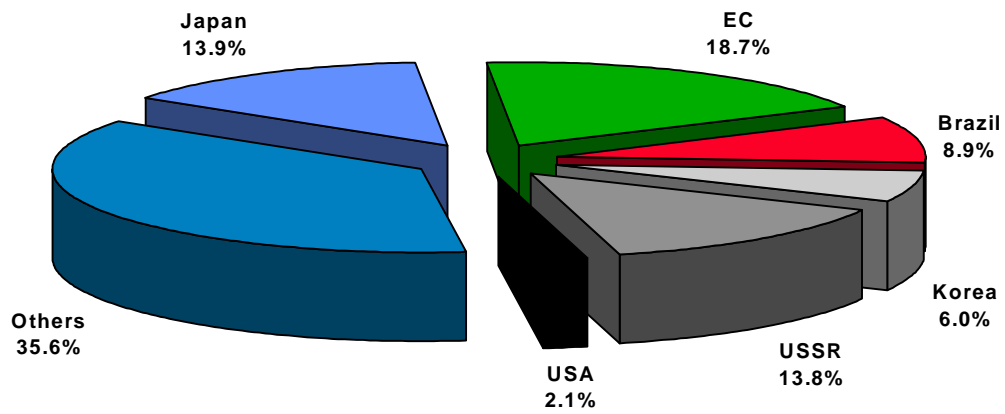


Fig.-19 Japanese Export Destinations in 1995

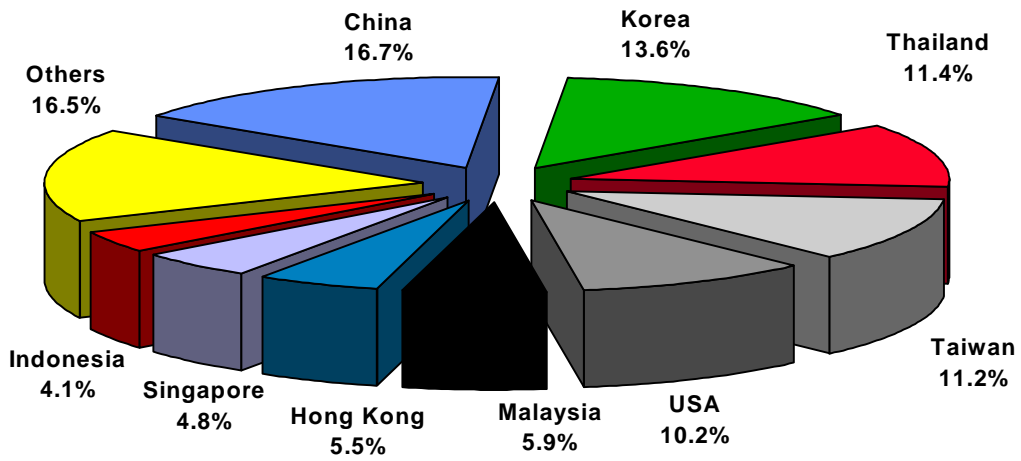
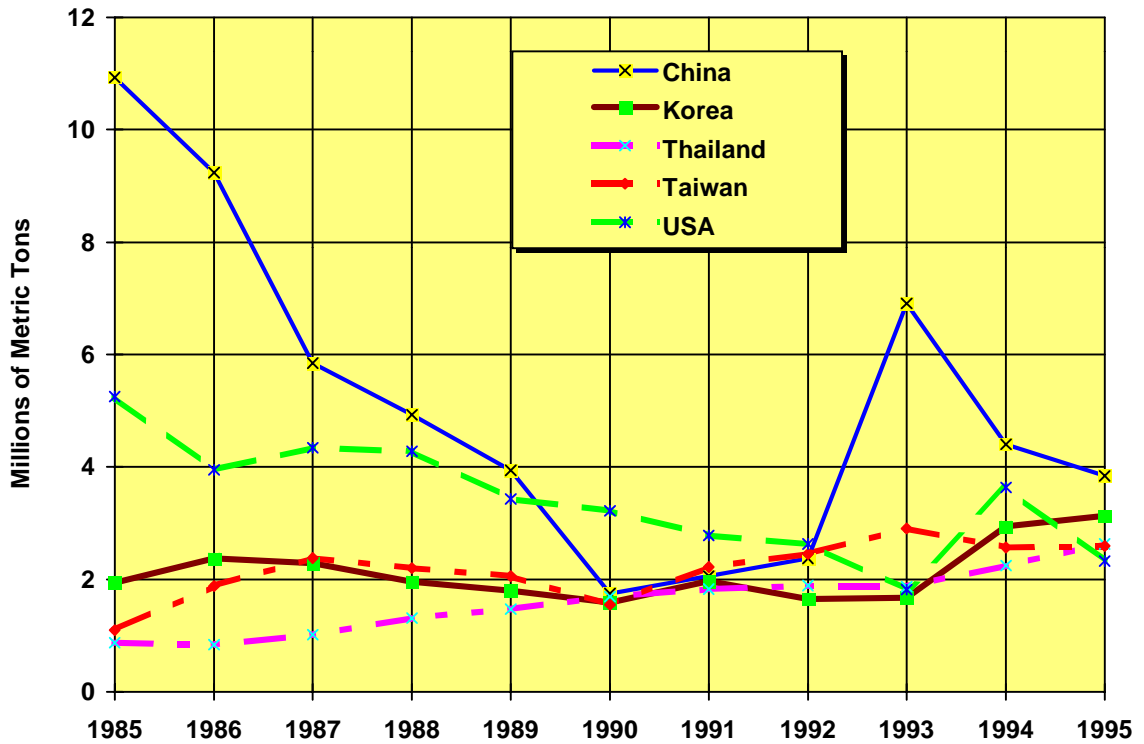


Fig.-20 Japanese Major Export Destinations



**PATTERNS OF STEEL TRADE IN DEVELOPING ASIA
AND IMPLICATIONS FOR STEEL TRADE ISSUES**

BY

**MS. NAE HEEN HAN
RESEARCH FELLOW, POSCO RESEARCH INSTITUTE**

Trade in steel has increased steadily since the 1970s despite the overall depression of the world steel industry and the protectionism that prevailed in international steel trade. World steel exports grew at an average annual rate of 3.4 per cent during the 1973-1994 period, whereas the world steel production increased at an annual rate of 0.7 per cent. (See Table 1) In particular, while world steel production recorded a negative growth rate in the early part of the 1990s, trade in steel has shown a robust 6.2 per cent annual growth rate. As a result, the share of steel exports in world steel production exhibited a steady increase; from 23 per cent in 1975 to 40 per cent in 1994.

Table 1. Growth Rate of World Steel Production and Export, (1976-1994)

(Unit: %, crude steel basis)

Average Annual Growth rate of	1976-80	1981-85	1986-90	1991-94
World Steel Production	1.2	0.3	1.5	-0.2
World Steel Export	2.2	3.7	1.0	6.2
Share of Export	24.9	28.4	28.7	36.2

Source : IISI Steel Statistical Yearbook 1995

Such a steady increase in steel trade is attributable in part to the expansion of free trade environment pursued under the GATT system and lower transportation costs. Another factor that brought about the steady expansion of world steel trade is the developing countries. Industrialization of developing countries causes increased consumption of steel that is not usually met by domestic supply within the developing countries. In this sense, the expansion of world steel trade owes a great deal to the rapid development of East Asia. For the last two decades or so, the Asian region has been the growth engine of the world economy, and both the steel production and consumption grew at a very high speed. However, in most countries the increase in steel production did not catch up with the increased steel consumption, and as a result, their imports of steel surged. This has made the Asian region the world's largest steel importing region in the 90s, and Asia is now serving as the outlet for the world's excess supply of steel.

The fact that the Asian region emerged as a major market for the world's steel producers is a very fortunate event for the world steel industry which has been suffering from overall excess capacity.

However, concerns have been arising recently, as the Asian countries are now trying to increase their own steel production capacities; fears of eventual excess capacity in the region have been reported by various sources, such a recent report by the UN's Economic Commission for Europe. Also, the expansion of steel production capacity is likely to accompany protective import substitution measures. All these trends imply the possibility of increased protectionism in world steel trade. Therefore, the development of the Asian steel industry is raising significant issues for future steel trade that are a concern of all of the steel producing countries.

This paper attempts to examine steel trade patterns of developing Asian economies in an effort to explore the issues in steel trade raised by the Asian region. In doing so, we look at steel trade patterns of the eight most dynamically developing countries in East Asia for the past decade. The eight countries are Korea, Chinese Taipei, China, Singapore, Malaysia, Thailand, Indonesia, and Philippines. For convenience, the eight countries in question are called Asia 8; Korea, Chinese Taipei, and China as Asia 3, and the five ASEAN countries as ASEAN 5 in this paper. Among these countries only Korea is a net exporter of steel (however, in 1995 its steel import exceeded steel export by a small margin). All others are net importers and have shown a significant increase in steel import levels in the 90s. These countries are considered to be at the centre of dynamic changes of the world economy and the world steel industry. It would have been desirable to include India, but it was not done due to limited data availability.

In the next section, the main characteristics of Asia 8's steel industry are briefly examined. In Section III, steel trade patterns of Asia 8 countries are examined with emphasis on the changes in the geographic distribution of import sources. In this section, differences in trade patterns are examined for semi-finished products, HR and CR sheets and strips, long products, and galvanised sheets. In Section IV, the currently active wave of capacity expansion plans in Asian 8 countries are examined along with a demand outlook in order to reveal the future steel trade issues raised by the Asian industry. Section V provides the conclusion of the paper.

II. Characteristics of the Asian Steel Industry

a) World's most dynamically growing steel industry

The East Asian region has been leading the growth of the world steel industry with its production and consumption rising far faster than the averages of the world and the developed countries since the 1980s. The trend is intensifying in the 1990s. World steel production recorded an annual average growth rate of 1 per cent between 1985-89 and -1.1 per cent between 1990-94 (Table 2). But Asia 8's steel production maintained an annual growth rate of around 7 per cent since 1985, and both Asia 3 and ASEAN 5's steel production an than doubled in the past decade.

Table 2. World Crude Steel Production (1985-1994)

	Production of Crude Steel (million tons)			Average Annual Growth Rate (%)	
	1985	1990	1994	1985-89	1990-94
World	718.9	770.1	730.2	1.8	-1.1
Developed Countries	343.9	362.9	355.7	1.1	-0.4
Asia 8	68.4	105.0	145.7	7.4	6.8
Asia 3	65.5	99.2	138.0	7.1	6.8
Korea	13.5	23.1	33.7	10.1	7.9
Chinese Taipei	5.2	9.7	11.6	11.8	3.5
China	46.8	66.3	92.6	5.6	6.9
ASEAN 5	2.9	5.8	7.7	12.1	6.0
Singapore	0.4	0.5	0.5	6.3	1.6
Malaysia	0.4	1.1	2.0	20.1	13.2
Thailand	0.4	0.7	1.5	9.0	16.4
Indonesia	1.4	3.0	3.2	11.6	2.2
Philippines	0.3	0.6	0.5	12.9	-4.6

Source: IISI Steel Statistical Yearbook 1995

Note: Developed Countries are United States, Western Europe, Japan.

Table 3. World Apparent Consumption of Crude Steel (1985-94)

	Apparent Consumption of Crude Steel (million tons)			Average Annual Growth Rate (%)	
	1985	1990	1994	1985-89	1990-94
World	720.4	773.6	724.3	2.1	-1.3
Developed Countries	301.5	347.4	337.6	2.3	-0.5
Asia 8	96.1	124.1	204.7	6.4	10.5
Asia 3	87.1	105.5	173.9	6.3	10.5
Korea	11.3	21.5	32.2	11.4	8.4
Chinese Taipei	6.3	15.4	23.1	18.3	8.5
China	69.5	63.6	113.6	3.6	11.6
ASEAN 5	9.0	18.6	30.8	7.7	10.6
Singapore	2.0	3.5	3.8	6.8	1.9
Malaysia	2.0	2.8	6.5	-1.3	18.4
Thailand	1.9	5.4	11.7	13.6	16.9
Indonesia	2.4	4.7	5.3	2.7	2.7
Philippines	0.7	2.1	3.5	24.7	8.4

Source: IISI Steel Statistical Yearbook 1995

Note: Developed Countries are United States, Western Europe, Japan.

The role of Asia as the growth pole of the world steel industry is even more impressive in the steel consumption during early 1990's. While apparent steel consumption at crude steel equivalents in the developed countries decreased at an annual rate of -1.1 per cent during 1990-94, Asia 8's steel consumption increased at an annual rate of 10 per cent (Table 3). Among Asia 8, China, Malaysia, and Thailand have shown the most rapid increase in steel consumption.

The rapid growth in Asia 8's steel production and consumption in both relative and absolute terms made its presence in the world steel industry more visible. Table 4 shows the share of Asia 8 in world steel production and consumption.

Table 4. **Asia 8's Share in World Production and Apparent Consumption of Crude Steel (1985-94)**

(Unit: %)

		1985	1990	1994
Developed Countries	<i>production</i>	47.8	47.1	48.7
	<i>consumption</i>	41.8	44.9	46.8
Asia 8	<i>production</i>	9.5	13.6	19.9
	<i>consumption</i>	13.3	16.0	28.3
Asia 3	<i>production</i>	9.1	12.9	18.9
	<i>consumption</i>	12.1	13.6	24.0
ASEAN 5	<i>production</i>	0.4	0.7	1.1
	<i>consumption</i>	1.3	2.4	4.3

Source: IISI Steel Statistical Yearbook 1995

Asia 8's shares in both world steel production and consumption rose substantially in the past decade. Asia 8 accounted for 19.9 per cent of world steel production and 28.3 per cent of world steel consumption in 1994. This amounts to double the figures for 1985. It is noted that Asia 8's share in world steel consumption is much higher than in steel production, a reflection of a large steel shortage in the region, which will be examined below.

b) *Imbalance between production and consumption*

Table 5 shows Asia 8's crude steel production as a percentage of apparent crude steel consumption, a measure of self-sufficiency in steel. None of the countries - except Korea - are self-sufficient, and the imbalance between steel production and consumption is more severe in the ASEAN countries, where crude steel production is only 26.4 per cent of steel consumption on average. The figures are extremely low for Singapore, Thailand, and Philippines.

The degree of self-sufficiency in steel has been deteriorating in the 90's for most of Asia 8 and especially for Chinese Taipei and the Philippines. This is attributable to the fact that the increase in steel production lags behind the increase in steel consumption.

Table 5. **Production of Crude Steel as a Percentage of Apparent Consumption of Crude Steel in Asia 8 (1985-94)**

(Unit: %)

	1985-89	1990-94	1994
Korea	142.7	111.3	104.8
Chinese Taipei	86.2	54.0	50.2
China	93.5	87.7	78.1
ASEAN 5	40.1	28.8	26.4
Singapore	21.3	13.7	13.9
Malaysia	38.3	33.2	31.6
Thailand	23.2	16.2	12.5
Indonesia	79.1	64.7	60.2
Philippines	37.7	21.2	13.6

Source: IISI, Steel Statistics of Developing Countries 1995

Note: Figures for 1985-89, 1990-94 are period averages.

c) Imbalance between upstream production and downstream production

Steel production is highly imbalanced in most of Asia 8, except in Korea and China, toward downstream production. Table 6 represents the ratio of production of crude steel to production of finished steel products in Asia 8, which could be used as an indicator of the imbalance between upstream and downstream production. A lower ratio implies that the country produces more of its steel products through downstream processes only without actually producing crude steel.

According to the table, the average for ASEAN 5 is below 50 per cent, with especially low figures for Singapore and Thailand. Such an imbalance between the upstream and downstream production necessitates a great deal of imports of semi-finished steel products into the region.

Table 6. **Ratio of Production of Crude Steel to Finished Steel in Asia 8 (1985-94)**

(Unit: %)

	1985	1988	1990	1991	1992	1993	1994
Korea	97.2	101.2	94.2	93.4	97.1	97.8	93.4
Chinese Taipei	87.6	93.8	76.7	74.2	62.7	61.0	56.4
China	126.7	126.7	128.8	125.9	120.9	116.2	109.9
ASEAN 5	-	-	-	45.5	43.8	48.7	43.9
Singapore	-	-	-	17.7	17.1	14.6	14.4
Malaysia	-	-	-	56.1	67.7	65.0	66.7
Thailand	-	-	-	29.3	30.3	27.0	42.3
Indonesia	-	-	-	80.5	67.9	99.7	70.2
Philippines	-	-	-	43.9	35.9	37.4	26.1

Source: IISI Statistical Year Book 1995

IISI Steel Statistics of Developing Countries 1995

Note: Figures for ASEAN 5 is average value of the ASEAN 5 countries.

d) *High Reliance on Electric Arc Furnace Production*

Another characteristic of Asia 8's steel industry is that it has a higher ratio of steel production by EAF (electric arc furnace) than by blast furnace. For example, the ASEAN 5 countries produce all of their steel through EAF routes (Table 7). This is due to the small size of the domestic market in these countries and low construction cost of electric arc furnaces. With a high proportion of their steel being produced by EAFs, most of the Asia 8 countries have to rely on imports for high quality steel products that cannot be produced by EAFs.

Table 7. **Share of Electric Arc Furnaces in Asia 8's Steel Production Capacity (1991-95)**

(Unit: %)

	1991	1992	1993	1994	1995
Korea	29.1	30.2	33.2	35.9	37.8
Chinese Taipei	54.6	52.1	52.1	52.1	50.3
China	21.1	21.8	23.2	21.1	21.5
Singapore	100.0	100.0	100.0	100.0	100.0
Malaysia	89.2	89.2	90.8	94.1	94.1
Thailand	100.0	100.0	100.0	100.0	100.0
Indonesia	100.0	100.0	100.0	100.0	100.0
Philippines	100.0	100.0	100.0	100.0	100.0

Source: POSCO Research Institute, World Steel Handbook, 1996

III. **Patterns of Steel Trade in Developing Asian Countries**

1. *An Overview of Asia 8's Steel Trade*

As Asia 8's steel industry is going through a dynamic growth period, its trade pattern is dynamically changing as well. Both steel export and import of Asia 8 have been growing rapidly and have more than doubled during the past decade (Table 8). However, the growth rate of steel import is far higher than the growth rate of steel export, especially in the 1990s. Due to steel consumption rising much faster than steel production, most of the Asia 8 countries are net importers of steel with insignificant exports, and the gap between import and export is widening.

Table 9 represents the net import of steel in Asia 8 during the past ten years. Asia 8's net import of steel has doubled between 1985 to 1994 to reach 52 million tons. Excess demand for steel is especially pronounced in ASEAN 5, where net imports of steel quadrupled in the past decade. In 1994, ASEAN 5's net import amounted to about two thirds of their steel consumption. China shows a very volatile net import pattern. China's steel import was especially large in 1993 and 1994, and half of Asia 8's steel imports then went to China. In contrast, net imports of steel in ASEAN 5 are rising in a steady manner and are becoming more significant in size over time. Due to the size and volatility of the Chinese steel imports, China will become an important factor for the stability of world steel trade in the future.

Table 8. World Export and Import of Semi-Finished and Finished Steel (1985-94)

	Export and Import of Semi-Finished and Finished Steel (million tons)			Average Annual Growth Rate(%)		
		1985	1990	1994	1985-89	1990-94
World	<i>export</i>	170.4	169.2	223.9	-0.1	5.8
	<i>import</i>	167.7	167.6	218.7	0.5	5.5
Developed Countries	<i>export</i>	117.9	107.6	127.4	-1.5	3.4
	<i>import</i>	79.7	95.6	111.6	3.7	3.1
Asia 8	<i>export</i>	8.4	13.0	18.3	7.0	7.1
	<i>import</i>	29.6	27.2	70.9	-1.5	21.1
Asia 3	<i>export</i>	7.7	11.4	14.8	5.5	5.4
	<i>import</i>	23.7	15.4	46.6	-5.1	24.8
Korea	<i>export</i>	5.7	7.6	9.6	6.4	4.9
	<i>import</i>	2.6	5.6	8.4	7.8	8.4
Chinese Taipei	<i>export</i>	1.9	1.6	2.8	-3.3	9.8
	<i>import</i>	1.4	5.7	12.8	32.8	17.7
China	<i>export</i>	0.2	2.1	2.4	34.0	2.8
	<i>import</i>	19.6	4.1	25.5	-15.6	44.1
ASEAN 5	<i>export</i>	0.7	1.5	3.4	19.4	17.3
	<i>import</i>	5.9	11.8	24.3	9.5	15.5
Singapore	<i>export</i>	0.4	0.7	0.3	13.0	-14.2
	<i>import</i>	1.7	2.8	3.7	7.2	5.4
Malaysia	<i>export</i>	0.07	0.3	2.0	28.3	46.1
	<i>import</i>	1.5	1.8	5.9	-1.0	27.2
Thailand	<i>export</i>	0.1	0.2	0.3	6.2	9.6
	<i>import</i>	1.4	4.3	9.4	16.9	16.9
Indonesia	<i>export</i>	0.1	0.4	0.7	38.2	16.1
	<i>import</i>	1.0	1.9	2.6	3.6	6.4
Philippines	<i>export</i>	0.0	0.03	0.07	30.3	16.7
	<i>import</i>	0.4	0.9	2.6	28.0	22.5

Source: IISI Steel Statistical Yearbook 1995

Asia's share in world steel export and import also doubled in 1994 from 1985 (Table 10). But the share of Asia 8 in world steel export is relatively small at 8 per cent, while Asia's share in world steel import is much higher at 32.4 per cent. In particular, ASEAN 5's share in world steel import has tripled to 11 per cent in 1994 from 3.5 per cent in 1985.

Table 9. Asia 8's Net Import of Steel Products (1985-94)

(Unit: thousand ton)

	1985	1988	1990	1991	1992	1993	1994
Asia 8	21,215	15,317	14,243	20,811	23,608	58,254	52,682
Korea	-3,018	-3,610	-1,962	521	-4,561	-5,817	-1,240
Chinese Taipei	-444	4,011	3,929	7,041	8,751	12,061	10,012
China	19,454	8,501	2,010	-121	4,351	35,383	23,057
ASEAN 5	5,223	6,415	10,266	13,370	15,067	16,627	20,853
Singapore	1,328	1,620	2,176	2,400	2,260	2,768	3,383
Malaysia	1,382	903	1,479	2,643	2,588	3,333	3,935
Thailand	1,270	2,490	4,125	5,760	6,918	6,418	9,127
Indonesia	875	555	1,581	1,210	1,273	1,808	1,889
Philippines	368	847	905	1,357	2,028	2,300	2,519

Source: IISI Statistical Yearbook 1995

Table 10. Asia 8's Share in World Steel Export and Import (1985-94)

(Unit: %)

		1985	1990	1994
Developed Countries	<i>export</i>	69.2	63.6	56.9
	<i>import</i>	47.5	57.0	50.8
Asia 8	<i>export</i>	4.7	7.3	8.0
	<i>import</i>	17.7	16.2	32.4
Asia 3	<i>export</i>	4.5	6.7	6.6
	<i>import</i>	14.1	9.2	21.3
ASEAN 5	<i>export</i>	0.2	0.5	1.4
	<i>import</i>	3.5	7.0	11.1

Source: IISI Steel Statistical Yearbook 1995

2. Steel Import Patterns of Asia 8

The rapid increase of Asia 8's steel imports has brought about visible changes in its import pattern. Changes in the relative share of different products in Asia 8's steel imports and the geographic distribution of import sources are examined below. Since a full set of data needed for the analysis was obtained only for 1985 and 1993, the trade patterns for the two years are compared.

Total Steel Products

Total imports of semi-finished and finished steel products in Asia 8 was 76 million tons in 1993, four times higher than 1985 (Table 11). In 1993, Asia 3 took about 74 per cent of the total 76 million tons steel imports and ASEAN took 26 per cent. In particular, China imported as much as 37 million tons of steel products, half of Asia 8's total steel imports in 1993.

Table 11. Asia 8's Steel Import by Products (1985, 1993)

	1985		1993	
	Quantity (M/T)	Share (%)	Quantity (M/T)	Share (%)
Semi-Finished Steel	1.1	9.9	20.4	26.9
Long Products	2.0	18.7	22.3	29.4
HR and CR Sheets	3.6	33.0	22.8	30.1
Galvanized Sheets	0.6	5.4	2.2	3.6
Total Steel Products	10.8	100.0	75.8	100.0

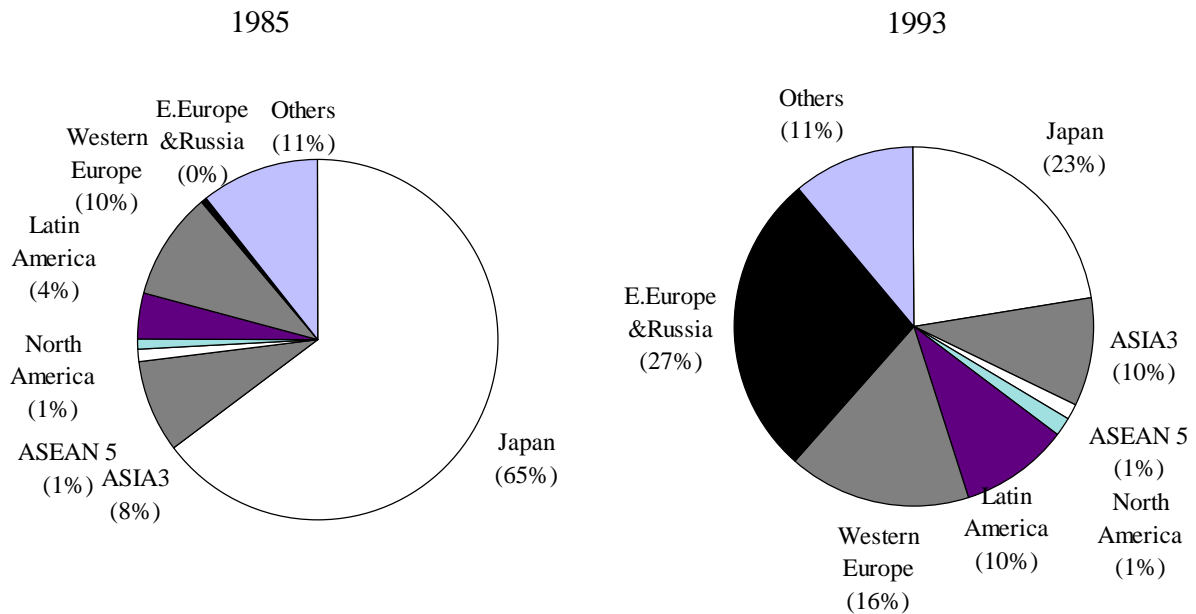
Source: Japan Steel Export Association

Asian countries (including Japan) used to be the largest suppliers to Asia 8's import market with a market share of 74 per cent in 1985 (Figure 1). But the picture changed dramatically in 1993. We can observe a drastic diversification of Asia 8's import sources. The share of Asian countries in Asia 8's import market was reduced to just 33.1 per cent in 1993. In this process, the decline of Japan's market share (from 64 per cent to 22.5 per cent) and the increase of former Russia and Eastern Europe's market share (from 0.5 per cent to 28 per cent) is most remarkable. The penetration of exports from former Russia and East European countries is most visible in China, where they supply 34.5 per cent of China's steel import.

Another trend worth noting in steel trade is that intra-regional trade among ASEAN 5 countries, though small in magnitude, is on an increasing trend; from 1.1 per cent of total ASEAN steel import in 1985 to 5.6 per cent in 1993. This may be because the geographic proximity and trade liberalisation of AFTA facilitates trade among them. It is expected that the intra-regional trade among ASEAN countries will gain more importance when exports of these countries become significant.

Western Europe, Latin America, and Korea also increased their market share in Asia 8's steel import, though not as dramatically as the former Russia and East Europe.

Figure 1. **Import Sources of Asia 8 (1985, 1993): Total Steel Products**



* Source : Japan Steel Export Association

Semi-Finished Steel Products

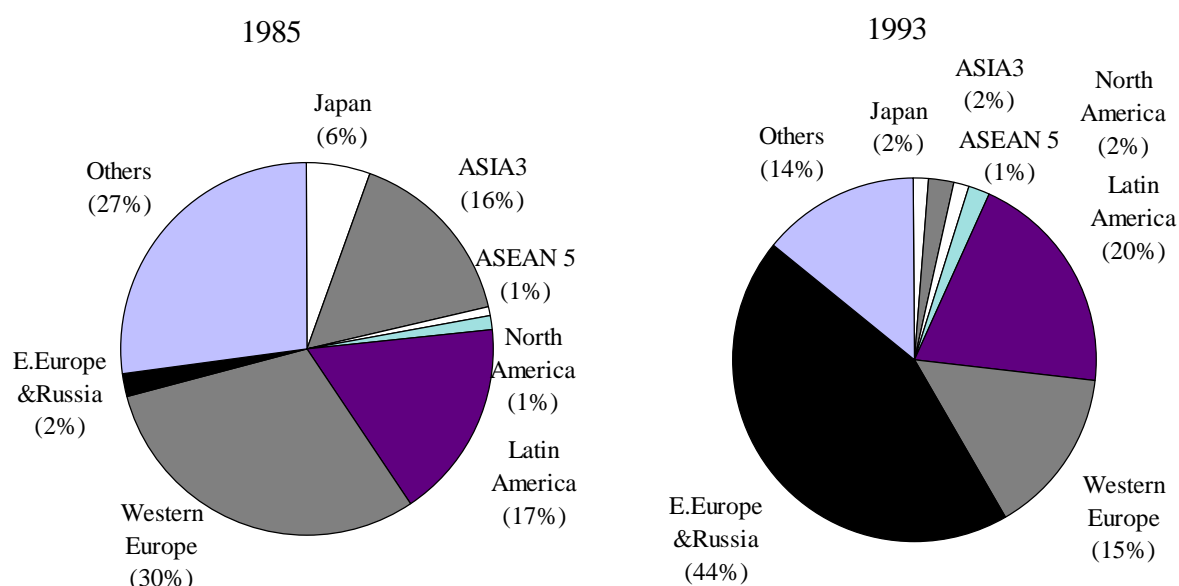
Semi-finished steel products have become more important in Asia 8's steel imports. This is because the increase in steel production capacity in Asia 8 is biased toward downstream processes. In 1985, Asia 8's import of semi-finished products was slightly over 1 million tons and represented about 10 per cent of total steel imports. But in 1993, Asia 8 imported 20 million tons of semi-finished products and the share of semi-finished products in total import rose to 27 per cent (Table 11). China and Chinese Taipei took about 70 per cent of Asia 8's import of semi-finished steel products in 1993.

In Asia 8's import of semi-finished steel products, dependence on Asian (including Japanese) suppliers was not very high in 1985 and is decreasing as well (Figure 2). In 1993, the share of Asia 8's import of semi-finished steel from Asian sources declined to mere 5 per cent. Intra-regional import among Asia 8 used to be about 17 per cent of total import of semi-finished steel in 1985 but fell to just 3 per cent in 1993. This is a reflection of the increasing imbalance between upstream production and downstream production in Asia 8.

The increase in Asia 8's import of semi-finished steel products from former Russia and East European countries are most impressive; it was 0.17 million tons and 1.7 per cent of Asia's imports of semi-finished steel in 1985, and rose to 20.4 million tons to account for 44 per cent of total imports of semi-finished steel in 1993.

Western Europe and Latin America also supply a significant part of Asia 8's imports of semi-finished products.

Figure 2. Import Sources of Asia 8 (1985, 1993): Semi-Finished Steel



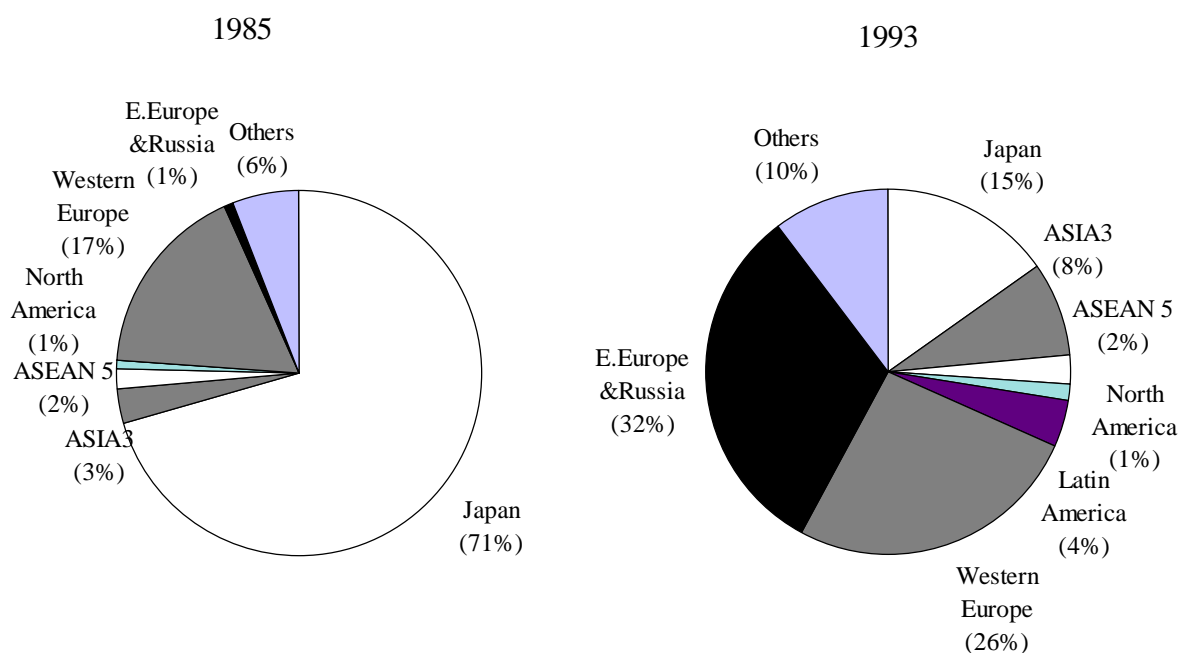
*Source : Japan Steel Export Association

Long Products

Asia 8's import of long products increased from 2 million tons in 1985 to 22.3 million tons in 1993; the share of long products in Asia 8's steel import has also increased from 18.7 per cent to 29.4 per cent. In 1993, China took 65 per cent of Asia 8's total import of long products and ASEAN 5, 17 per cent.

Diversification trends in import sources of Asia 8 are most visible in long products. Asia 8's import of long products from Asian countries decreased to 25.6 per cent in 1993 from 76.2 per cent in 1985 (Figure 3). The loss of Japan's share in Asia 8's long product import market is dramatic; it used to be 71 per cent in 1985 but fell to 15 per cent in 1993. The loss of Japan's market share has been replaced by increased exports by former Russia and Eastern Europe, Western Europe, and Latin America and Korea. Among these countries, former Russia and Eastern Europe took the largest part with their market share rising to 32 per cent in 1993, and Western Europe follows with 26 per cent.

Figure 3. Import Sources of Asia 8 (1985, 1993): Long Products



*Source : Japan Steel Export Association

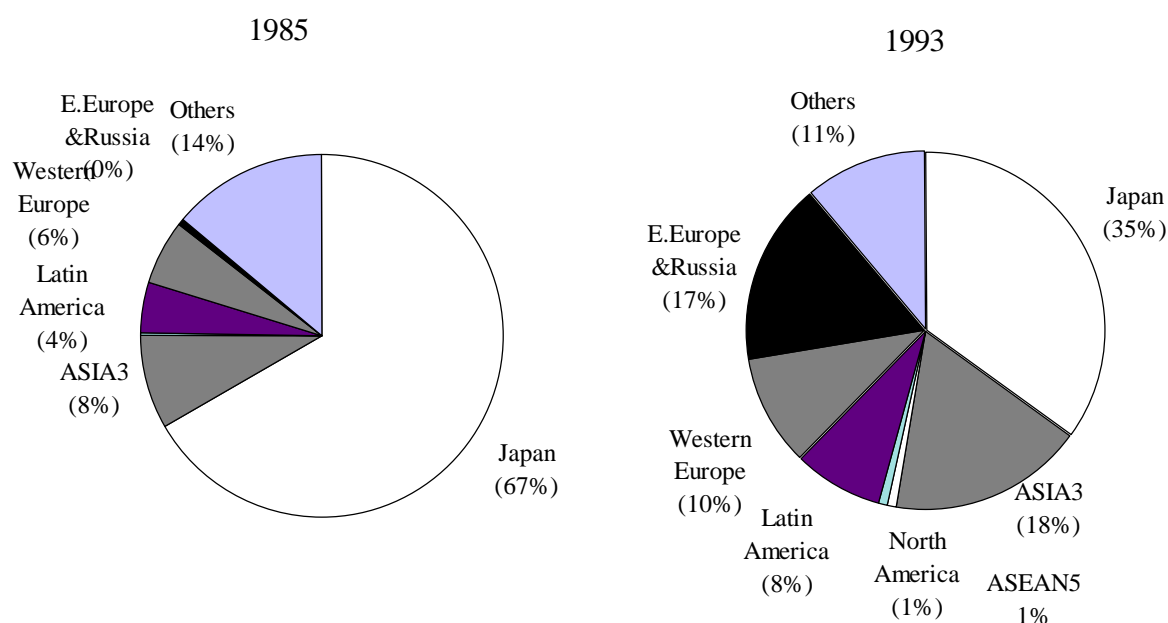
HR and CR sheets

While Asia 8's imports of HR and CR sheets (including strips and hoops) increased to 22.8 million tons in 1993 from 3.6 million tons in 1985, its share in total steel imports has slightly declined (Table 11). This is because, despite the rapid increase in the imports of HR and CR sheets by China and ASEAN 5, imports by Korea has declined and imports by Chinese Taipei did not increase as fast as its imports of other steel products. Therefore, it can be said that the shortage of flat products seems to be more significant in ASEAN 5 and China. In fact, ASEAN 5 took 34 per cent of Asia 8's total imports of HR and CR sheets in 1993.

As for the import sources of HR and CR sheets, Asia 8 has a relatively high dependence on Asian suppliers (Figure 4). About 53 per cent of Asia 8's imports of HR and CR sheets comes from Asian countries, and the decrease in the share of Asian suppliers is relatively small. This occurred because despite the falling share of Japanese suppliers, the share of Korean suppliers increased. The share of Korea in Asia 8's imports of HR and CR sheets increased to 13.6 per cent in 1993 from 5.1 per cent in 1985.

The penetration by former Russia and Eastern Europe in Asia 8's HR and CR sheets import market is not as drastic as in the case of semi-finished and long products. Intra-regional trade among ASEAN 5 is insignificant at around 2 per cent and does not show any upward movements.

Figure 4. **Import Sources of Asia 8 (1985, 1993): HR and CR Sheets**



*Source : Japan Steel Export Association

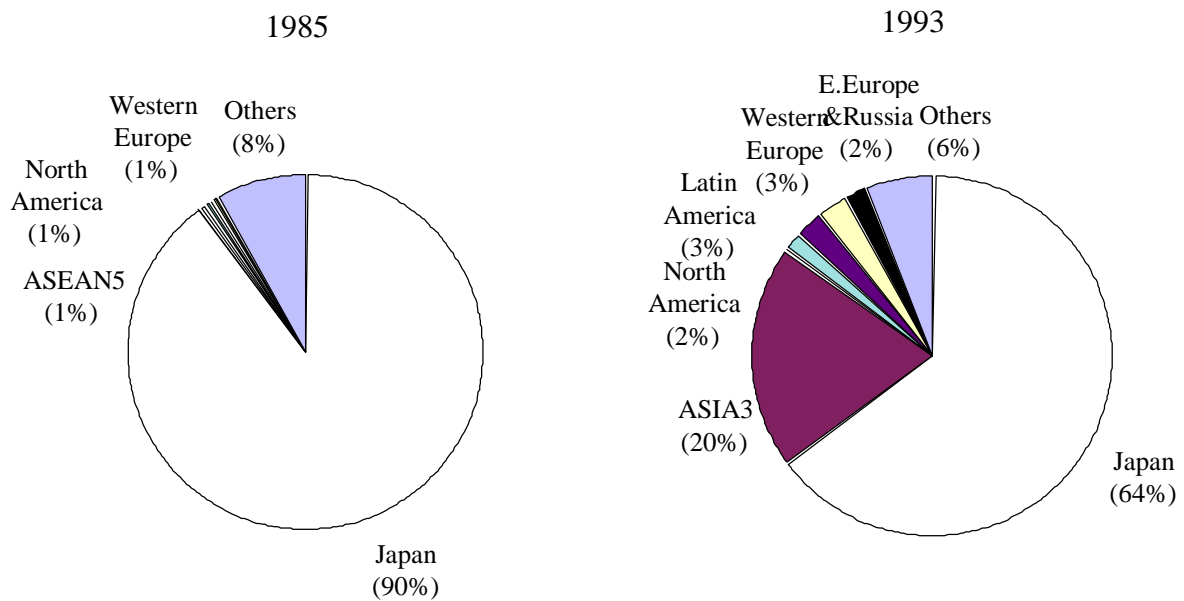
Galvanized Sheets

Asia 8's import of galvanized sheets increased to 2.2 million tons in 1993 from 0.6 million tons in 1985. However, its share in Asia 8's total import of steel declined from 5.4 per cent to 2.8 per cent. This reflects the fact that the increase in steel demand in Asia 8 is biased toward semi-finished and long products.

Changes in Asia 8's import sources of galvanized sheets are the least visible. Asia 8 depends heavily on other Asian suppliers such as Japan and Korea; import of galvanized sheets from Asian countries accounted for 90.3 per cent in 1985 and 85.0 per cent in 1993 of total imports of galvanized sheets (Figure 5). Japan's share in Asia 8's import market has remained buoyant in the case of galvanized sheets. Korea's share increased noticeably to 18.5 per cent in 1993 from 0.1 per cent in 1985.

Intra-regional trade among ASEAN 5 in import of galvanized sheets remains at about the 1 per cent level.

Figure 5. **Import Sources of Asia 8 (1985, 1993): Galvanized Sheets**

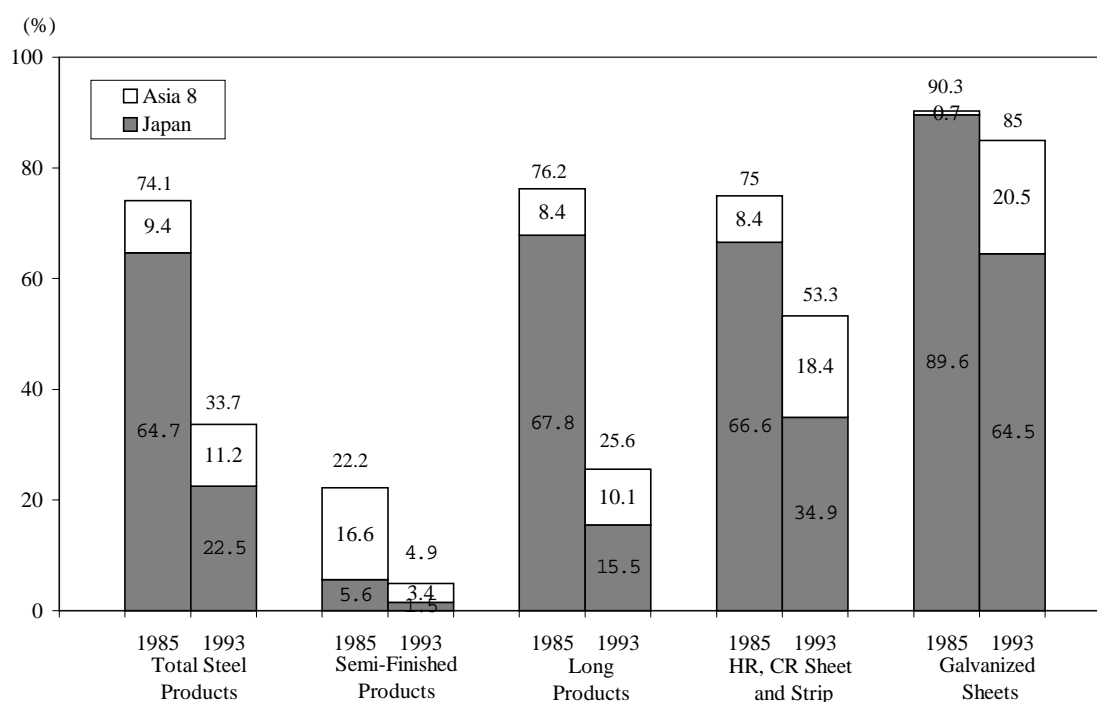


*Source : Japan Steel Export Association

From what we have observed so far it can be concluded that the surge in the steel import of Asian developing countries contributed to the expansion of global trade in steel. The degree of diversification in import sources was more apparent in the low grade products like semi-finished and long products (Figure 6). This is attributable to the fact that the increase in steel import of Asia 8 was stronger in these products, and these are more generalised products which are not very sensitive to specific user demands. Among diversified import sources, former Russia and Eastern Europe gained considerable market share accompanied by a large decline in Japan's share.

The diversification of import sources of Asian steel import market implies that competition in this market is becoming more fierce. This is already evidenced by volatile movements of steel prices in the Asian steel market.

Figure 6. Share of Asia 8's Intra-regional Imports (1985, 1993)



* Intra-regional imports refer to imports from Asia 8 + Japan

* Source : Japan Steel Export Association

3. Steel Export Pattern of Asia 3

Since the Asia 8 overall suffer from shortage of steel, their steel export is insignificant in size and does not exert much influence in world steel trade. Due to limited data availability, it was not possible to examine Asia 8's export pattern in a manner parallel to the import pattern. Here, we focus on the export pattern of Asia 3 whose exports are most significant among developing Asian countries.

Asia 8's export of total steel products doubled between 1985 and 1993, but it is still much smaller in size compared to import (Table 12). Long products used to have the largest share in Asia 3's exports in 1985, but in 1993 HR and CR sheets are far more important in Asia 3's exports, accounting for 55 per cent of total export. This is attributable primarily to the increased exports by Korea, which recorded 6.3 million tons in 1993, more than 3.5 times higher than in 1985.

Table 12. Asia 3's Steel Export by Products (1985, 1993)

(Unit: %)

	1985		1993	
	Quantity (M/T)	Share (%)	Quantity (M/T)	Share (%)
Semi-Finished Products	0.5	7.1	0.4	2.7
Long Products	2.4	34.2	2.5	16.6
HR, CR Sheets	2.0	28.6	8.4	55.6
Galvanized Sheets	0.2	2.9	1.1	7.3
Total Steel Products	7.0	100.0	15.1	100.0

Source: Japan Steel Export Association

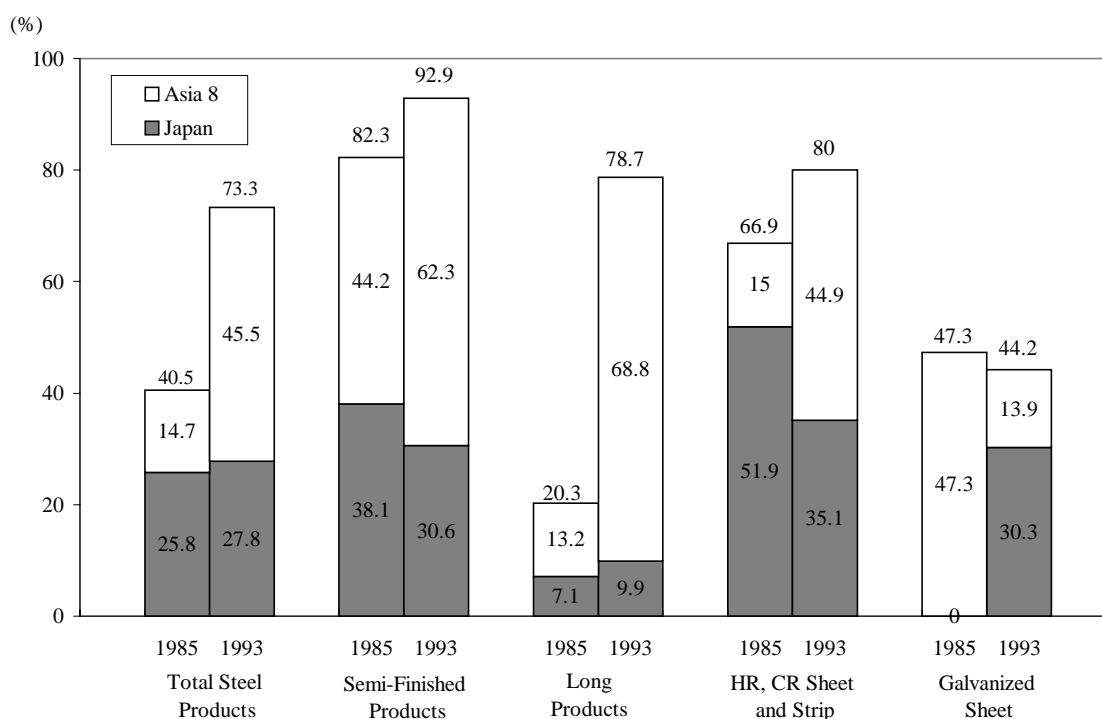
The steel export pattern of Asia 3 is highly regionalised, and there has been a trend toward more regionalisation in the 1990 (Figure 7). A majority of Asia 3's steel exports are directed to Asia and North America, but the share of Asia 3's exports which goes to North America is declining while the share going to Asia is increasing. In 1985, 41 per cent of Asia 3's total steel exports went to Asia and 25 per cent to North America; in 1993, 73.3 per cent went to Asia and 7 per cent to North America. Japan is an important export market for Asia 3 with about a 30 per cent share in Asia 3's export.

Figure 7 can be also used to examine the trends in intra-regional exports of Asia 3 for different products. In 1993, all products except galvanised sheets exhibit a high ratio of intra-regional export. Long products used to have a very low percentage of intra-regional export in 1985 (20.3 per cent) compared to other products, but it increased substantially to 79 per cent in 1993.

In semi-finished and long products, Asia 8 takes more than 60 per cent of Asia 3's exports of these products. Japan used to be the sole market for Asia 3's exports of galvanised sheets in 1985. However, in 1993, Asia 8 absorbed about 14 per cent of Asia 3's exports of galvanised sheets. But the level of intra-regional exports is not as strong in the case of galvanised sheets.

A comparison of the import and export patterns highlights the fact that while Asian countries' steel imports are becoming more diversified, their steel exports became more regionalised over the past decade. These seemingly contradictory observations actually derive from one fact -- that the Asian countries have emerged as an important market for all of the steel producing countries in the world. Such concentration of the world steel export to Asia might have been more intensified due to the large scale filing of AD/CVD cases by the U.S. in 1992, which resulted in limitation of exports to the U.S. market.

Figure 7. Share of Asia 3's Intra-regional Exports (1985, 1993)



* Intra-regional exports refer to exports to Asia 8 + Japan

* Source : Japan Steel Export Association

IV. Capacity Expansion Drive in Asia and Emerging Issues

One of the concerns of the world steel industry in relation to the Asian one would be whether the trend in the Asian steel trade will continue. In particular, a key concern will be about whether the region will remain as the world's largest import market for the world steel industry. This of course will depend on the prospects of relative demand and supply situation and steel trade policies in the region.

There is no doubt that the Asian economies will continue to grow fast for some time in the future, and the region's steel consumption will keep increasing at a fast rate, especially in the ASEAN countries. But this does not necessarily mean that the region's net imports will continue to grow at the same high speed, if their production capacity rises as fast.

Lately, each country in developing Asia has been introducing steel promotion policies aimed at improving self-sufficiency in steel. These policies are aimed at increasing upstream production capacity and provide financial incentives and protective measures to protect domestic producers. The current active investment drive for steel projects in developing Asian countries is likely to result in a considerable increase in the production capacity of the Asian countries. Table 13 provides a list of the new steel mill projects in Asian 8 countries that will lead to an increase in crude steel making capacity and are currently under construction or are finalised for operation by 2000.

Table 13. Asia 8's Steel Mill Projects

Country	Company	Capacity	Operation
China	Baoshan	280 M/T	1997
	Wuhan	440 M/T	1995
Korea	POSCO*	180 M/T	1996
	POSCO	300 M/T	1998
	Hanbo*	200 M/T	1997
Chinese Taipei	CSC	240 M/T	1997
	Yieh-Loong Group	750 M/T	2001
Malaysia	Lion Group (Megasteel)	200 M/T	1998
	Perwaja Steel*	70 M/T	1996
Indonesia	Krakatau*	100 M/T	1999
	Krakatau**	70 M/T	1999
	Krakatau	200 M/T	2000
Thailand	Thai Special Steel	275 M/T	1998
	Siam Strip Mill*	135 M/T	1998
Philippines	F. Jacinto Group*	125 M/T	1998

Source: POSRI survey

* : Electric arc furnace

** : Expansion of existing facility

Based on this information, Table 14 presents a forecast of shortage of steel in Asia 8 in the year 2000. The increase in production is likely to be significant in Korea, Chinese Taipei, and China and as a result, the region's excess demand for steel is likely to be reduced to 30.1 million tons in 2000. On the other hand, excess demand in ASEAN 5 is expected to increase to 30.8 million tons in 2000. Therefore, until 2000, the Asian region will continue to be the world's most important steel importing region with an excess demand of about 60 million tons. However, it should be noted that the production forecasts are rather conservative, since they included only the projects that are currently confirmed.

Table 14. Forecasts of Asia 8's Shortage of Steel in 2000

(Unit: million ton, crude steel basis)

	1993			2000		
	Production	Consumption	Shortage	Production	Consumption	Shortage
Asia 8	142.4	207.8	65.4	216.2	255.4	60.9
Korea	33.2	26.7	-6.5	46.5	39.7	-6.8
Chinese Taipei	12.0	24.9	12.9	19.6	31.9	12.2
China	89.5	129.4	39.8	114.3	139.0	24.7
ASEAN 5	7.7	26.9	19.2	15.6	44.8	30.8
Singapore	0.5	4.2	3.6	1.3	4.9	3.7
Malaysia	1.8	5.6	3.6	3.7	10.8	7.1
Thailand	1.0	8.2	7.2	3.0	12.7	9.7
Indonesia	3.8	5.8	2.0	5.3	12.0	6.8
Philippines	0.6	3.1	2.5	0.9	4.4	3.5

Source: Production and consumption figures for 1993: IISI

Production and consumption figures for 2000: POSRI survey (Production in 2000 is obtained by multiplying production capacity survey figures by 0.9)

The supply outlook of the developing Asian countries beyond 2000 is even more uncertain, but a high possibility exists that the region will experience a more rapid increase in production capacity. Currently, there are numerous large scale projects under consideration in Asian countries. For example, Chinese Taipei is considering several large steel mill projects, and if all Chinese Taipei's currently planned projects are realised, it will have a production capacity of 52 million tons in 2010. Indonesia's PT Krakatau has plans to increase its capacity to 16.7 million tons by 2020. The Indian government has announced plans to promote its steel production and to export 6 million tons of steel around the year 2001-2, and probably more after that. Even though there is a great deal of uncertainty about the feasibility of these plans, it is highly likely that the production capacity in Asia will rise much faster after 2000.

China is another uncertainty factor in the Asian steel industry. The Chinese government once announced a plan to increase its steel production to 120 million tons by 2000 and had plans for several large-scale projects. But due to financing problems, it cancelled most of the large-scale investment plans and is instead trying to expand capacity through existing facilities and mini-mills for now. It may change such a policy direction at any time, and the possibility of this shift is higher after 2000.

The trend toward self-sufficiency of steel in each country implies that eventually, the Asian region will have less ability to absorb exports from the rest of the world. Further, since Chinese Taipei and India are expanding their production capacities rather rapidly, aiming at the Asian market, the region's steel trade may show more regionalised patterns in the future. Also, as the steel industries of the ASEAN countries develop, there will be a greater tendency toward intra-regional trade among themselves utilising AFTA's unified market.

V. Conclusion

The economic development of the Asian region and its steel industry has contributed much toward the expansion of world trade in steel. Recent world trade in steel enjoyed the freest environment since the 70s, free of any restrictive measures. It may be argued that the Asian region contributed to such a freer trade environment and less trade disputes in the world steel industry in the 1990s. As the Asian region provided a new export market for world steel producers, it may possibly have relieved part of the pressure from the overall excess capacity of the world steel industry.

However, the currently active capacity expansion drive in developing Asian countries raises a great deal of concern for the international steel industry as it raises fears of eventual excess supply in the region. Expansion of steel production in developing countries and contraction of steel production of developed countries might be regarded as a natural and desirable process consistent with specialisation according to comparative advantage. However, in reality this process may not happen in such an ideal way and the development of the Asian steel industry may result in an aggravation of a world steel industry's excess supply problem. First of all, the adjustment processes in the developed countries will be resisted by the producers of the contracting country and will be delayed with various distortive measures, as we have witnessed in the past. Also, there is no guarantee that the expansion processes in the developing countries always comply with comparative advantage. The governments of the developing countries may provide incentives and import protection to promote the domestic steel industry for strategic purposes.

Therefore, the Asian region, which has contributed toward world steel trade so far, may become a factor that causes more protectionism in world steel trade in the future. The world's steel trade since the 1970s is characterised by numerous trade disputes that usually found solutions in restrictive trade measures like VRA's. It can be argued that the underlying cause of trade disputes among major steel producing countries has been the structural excess capacity of the world steel industry. With the

decreasing ability of developing Asia to absorb the world's excess supply of steel, the chances are that trade disputes will become more frequent. Even higher possibilities of trade disputes exist when developing Asia's ability to export becomes significant in world steel trade.

In order to prevent a backward regression to the protectionist and restricted steel trade regime, it is time that the world steel industry built a framework for steel trade order based on a free trade spirit. MSA has been an attempt to this end but has not achieved much progress due to the conflicting interests of traditional steel producers. Moreover, it is aimed at solving problems among traditional steel producers, and in its current form it does not have any concessions for newly developing countries nor is it able to tackle the newly emerging issues posed by the Asian steel industry beyond 2000. Therefore, it is certain that for the MSA to serve as a framework for the world steel trade system, it needs to redesign the key issues in a more balanced perspective to embrace the developing Asian countries which are becoming increasingly important in the world steel industry.

REFERENCES

FISH, Peter M., *The International Steel Trade*, Woodhead Publishing Limited, Cambridge, England, 1995.

IISI, *Steel Statistical Yearbook*, 1995.

IISI, *Steel Statistics of Developing Countries*, 1995.

Japan Steel Export Association, *Monthly Review*, various issues.

POSCO Research Institute, *World Steel Handbook*, 1995.

POSCO Research Institute, *The Outlook for World Flat Steel Product Market in 2000*, 1995.

UN, Economic Commission for Europe, *The Steel Market in 1995 and Prospects for 1996*, July 1996.

**THE SITUATION IN STEEL
THE ROLE OF GOVERNMENTS IN SELECTED AREAS**

THE ROLE OF GOVERNMENT IN THE STEEL INDUSTRY

BY

**MR. MING-SHEN TSENG
DIRECTOR, RESEARCH DIVISION 3
TAIWAN INSTITUTE OF ECONOMIC RESEARCH**

The steel industry has always been considered as a barometer of a country's material strength. With the name of the "mother of all industries," the steel industry has played an important role in the economic and social development of industrialised and developing countries. Therefore almost every government in the world has laid emphasis on its development and growth and various measures are used to support the industry. Chinese Taipei is no exception.

The purpose of this report is to explore the role played by our government in the steel industry. I will start by reviewing the tracks of the past development in the industry and the role played by our Government. Then I will discuss what kind of role this government can play in the future, based on the changing environment and development trends in this industry.

Development of the steel industry in Chinese Taipei

Looking at the whole process of development, two aspects of our government's policy towards the industry may be brought into discussion: 1) to meet the domestic demand of steel products in the process of fast economic growth; 2) to provide solutions to specific problems at certain periods of time.

When Chinese Taipei freed itself from Japanese rule, the government undertook great efforts to reconstruct the heavily hit island. It was during this period that the steel industry grew at a fast pace. Production at that time was totally for local consumption and all round planning did not exist.

In order to promote economic development, our government adopted a series of plans for economic construction from 1950 to 1960. The emphasis was to improve agricultural productivity and assist in the growth of manufacturing industries (mostly labour intensive industries). The steel industry, a capital intensive industry, was not the focus at that time. However, there was more and more demand for steel products as the economy grew rapidly.

The industry took up the opportunity, restructured, expanded, and adopted advanced production technology. After importation of waste ships for scrap was granted in 1965, ship-breaking became a prosperous business. Increasing supply of scrap from ship-breaking made possible a growing number of small steel mills. Ship-breaking, rolling mills and electric furnace steel making were the major players in the industry at that time. Large amount of bars and wire rods were produced for local needs.

In the 70s, considering the advancement of production technology in the steel industry and the necessity of industrialising the economy, the Government started to implement a big project of

constructing an integrated steel plant. Since not much interest was shown from the private sector, the Government decided to build the plant on its own. There were three objectives for carrying out the plan: 1) self-sufficiency of steel production in respect to national defence; 2) to accumulate technological experience in the steel production; 3) to support the development of downstream steel and other industries which used steel as an essential input.

The integrated steel plant was named the China Steel Corporation (hereafter called China Steel or CSC). The plant construction of CSC was planned in four phases. The first phase was completed in 1977, with an annual crude steel capacity of 1.5 million metric tons. Major products were plates, wire rods and bars for machinery framework. It was a big step forward for the local steel industry. By the time CSC completed its phase two expansion in 1982, its annual crude steel capacity increased to 3.25 million metric tons and hot cold rolled steel products were added into its product lines. The third phase of the expansion project was completed in 1988 and CSC's annual crude steel capacity reached the present 5.65 million metric tons. Most importantly, not only has the quality of hot/cold rolled steel products, plates, wire rods, etc. been upgraded significantly, but also CSC has gained the capability to produce high quality steels such as stainless steel instead of just carbon steel. The fourth phase is expected to finish up by November 1996. Annual crude steel production will be 8.04 million metric tons. This will rank CSC as the sixteenth largest steel mill in the world.

Before CSC started operating, 80 per cent of crude steel was produced by electric furnaces owned by numerous small plants. Right now more than half of the total crude steel production in Chinese Taipei is produced by CSC's integrated steel mill. The total annual production capacity of crude steel in Chinese Taipei reached 1 million metric tons as of 19 June, 1996. China Steel accounted for 4 per cent (see Table 1).

Table 1 Statistics on Crude Steel Production in Taiwan

Unit: Thousand Metric Tons

	Electric Furnace		Blast Furnace		Total	
	Volume	%	Volume	%	Volume	%
1977	1 362	80.35	333	19.65	1 695	100.00
1978	1 200	50.17	1 192	49.83	2 392	100.00
1979	1 446	47.43	1 603	52.57	3 049	100.00
1980	1 750	52.01	1 615	47.99	3 365	100.00
1981	1 621	51.35	1 536	48.65	3 157	100.00
1982	1 508	36.32	2 644	63.68	4 152	100.00
1983	1 611	32.08	3 411	67.92	5 022	100.00
1984	1 593	32.29	3 341	67.73	4 933	100.00
1985	1 839	35.46	3 347	64.54	5 186	100.00
1986	1 904	34.34	3 641	65.66	5 545	100.00
1987	2 067	35.82	3 704	64.18	5 770	100.00
1988	2 675	32.28	5 613	67.72	8 288	100.00
1989	3 046	33.67	6 001	66.33	9 047	100.00
1990	4 120	42.27	5 627	57.73	9 747	100.00
1991	5 143	46.87	5 829	53.13	10 973	100.00
1992	5 285	49.37	5 421	50.64	10 705	100.00
1993	5 731	47.86	6 244	52.14	11 975	100.00
1994	5 415	46.92	6 127	53.08	11 542	100.00
1995	5 463	46.74	6 224	53.26	11 687	100.00

Note: China Steel is the only steel production plant using blast furnace to produce crude steel in Taiwan.

Source: IISI data.

II. Current Status of the Steel Industry in Chinese Taipei

Today, there are 412 steel companies in Chinese Taipei, which account for 0.3 per cent of the total manufacturing industry. The number of people working in the industry is 56 891, which accounts for 2.4 per cent of all manufacturing workers. The total value of steel production was 15.83 billion US dollars at the end of 1995, which accounted for 6.5 per cent of the total production value of all manufacturing industries. These numbers indicate that the steel industry has been an important sector in the local economy.

According to the Steel Industry Association of Chinese Taipei, members producing coil and ordinary processing products account for the largest number, steel bar producers rank second, pipe and tube producers are third. The top three account for more than half of the membership. As for the value of capital, steel making accounts for the highest (58.63 per cent), next is steel structure (12.69 per cent) and steel pipe and tube producers (7.21 per cent). These three types of manufacturers make up almost 80 per cent of the total capital of all members (see Table 2).

Table 2 **Structure of the Steel Industry in Taiwan**

Sector	Number of Manufacturers		Number of Employees		Capital Amount	
	Number	%	Number	%	NTD Million	%
Steel Making	37	8.98	23 326	41.00	119 455	58.63
Ferro-Alloy	4	0.97	566	0.99	402	0.20
Casting	6	1.46	571	1.00	282	0.14
Bars & Rods	72	17.48	3 239	5.69	7 701	3.78
Sections	16	3.88	551	0.97	1 052	0.52
Wire Products	14	3.40	933	1.64	3 134	1.54
Steel Pipes & Tubes	48	11.65	5 871	10.32	14 504	7.12
Stainless Steel Pipes & Tubes	13	3.16	588	1.03	834	0.41
Steel Structures	40	9.71	12 488	21.95	25 858	12.69
Steel Flat Product	91	22.09	3 150	5.54	9 197	4.51
Cutting & Shearing						
Stainless Steel Coil Center	31	7.52	862	1.52	8 556	4.20
Welding Electrode	10	2.43	858	1.51	605	0.30
Other Steel Processing	30	7.28	3 888	6.83	12 167	5.97
Total	412	100.00	56 891	100.00	203 747	100.00

Note: Only data on members of the Taiwan Steel & Iron Industries Association are included in this table.

Source: Taiwan Steel & Iron Industries Association Data.

Being the 18th crude steel producer in the world, Chinese Taipei accounts for 6 per cent of world production (see Table 3). About 11.69 million metric tons of crude steel were produced here in 1995, this only provides for about 50 per cent of local needs. The percentage is not only lower than that of the industrialised countries, but also lower than that of some Asian countries such as South Korea (88.8 per cent) and India (86 per cent). The Government has set its target to raise the rate of self-sufficiency to 100 per cent in the near future.

Table 3 Production and Apparent Consumption of Crude Steel in Taiwan

Unit: Thousand Metric Tons

	Production	Apparent Consumption	Rate of Self Sufficiency (%)
1977	1 695	4 800	35.31
1978	2 392	4 922	48.60
1979	3 049	5 248	58.10
1980	3 365	6 328	53.18
1981	3 157	5 563	56.75
1982	4 152	5 074	81.83
1983	5 022	5 770	87.04
1984	4 933	6 086	81.05
1985	5 186	6 316	82.11
1986	5 545	7 835	70.77
1987	5 770	9 401	61.38
1988	8 288	11 628	71.28
1989	9 047	14 100	64.16
1990	9 747	15 346	63.51
1991	10 973	18 932	57.96
1992	10 705	21 297	50.27
1993	11 975	25 108	47.69
1994	11 542	22 981	50.22
1995	11 687	24 090	48.51

Source: IISI data.

As for structure of the steel products, most of the production lies in ordinary steel products. The ratio between ordinary steel products and special steel products is 97 per cent to 3 per cent. Ordinary steel products meet about 90 per cent of the domestic market demand, but the supply of special steel products only meets 60 per cent of local demand (see Table 4). For this reason, it is our goal to develop the special steel industry in the future.

Table 4 Production Structure of Steel in Taiwan

Unit: Thousand Metric Tons; %

Year	Types of Steel	Production	Import	Export	Apparent Consumption	Rate of Self-Sufficiency	Rate of Export
1993	Ordinary	20 078	6 477	2 534	24 021	83.59	12.62
	Special Steels	484	655	85	1 054	45.87	17.48
	Total	20 562	7 132	2 619	25 075	82.00	12.74
1994	Ordinary	20 609	4 401	2 595	22 415	91.94	12.59
	Special Steels	501	623	101	1 022	49.01	20.25
	Total	21 110	5 024	2 697	23 437	90.07	12.77
1995	Ordinary	20 627	5 279	2 668	23 239	88.76	12.93
	Special Steels	674	710	252	1 131	59.56	37.41
	Total	21 301	5 989	2 920	24 370	87.41	13.71

Source: Taiwan Steel & Iron Industries Association Data.

III. The establishment and privatisation of the China Steel Corporation

The birth of China Steel Corporation

We have explained briefly in the above paragraphs the background of the establishment of China Steel. Although there quite a number of private steel mills in the seventies, they were small, product variety was limited and quality was low. Much of steel product demand in the local market was imported. It was because of our Government's intention to induce technological transformation in local steel production that CSC was born.

Originally China Steel was to be organised as a private company in which the Government owned 45 per cent of the capital and private sectors (both domestic and foreign) owned the other 55 per cent. Unfortunately the private sector had a very limited amount of funds at that time and foreign capital was withdrawn at the last moment. Nor did they have the interest or confidence for investment in an integrated steel mill. The government carried out the plan anyway. With hindsight, it seems to have been a very wise decision.

In order to avoid management difficulty arising from legal restrictions, our Government issued a decree that granted the CSC with more autonomy than other state-managed companies. Taking personnel recruitment for example, all employees were hired on a contract basis, except the director of the board and the general manager. The latter two positions were government appointed. This policy allowed CSC to hire and fire people with almost the same degree of freedom as a private enterprise.

The coming into operation of China Steel was a milestone in the modernisation of the steel industry in Chinese Taipei. When China Steel started operation in the middle of 1978, steel production in Chinese Taipei rose startlingly to US \$1.67 billion, up from US \$1.07 billion the previous year. China Steel launched three more expansion projects afterwards, which led to the prosperity of the downstream steel industry. Electric furnace mills and rolling mills also increased their investments and expanded significantly. In 1995 CSC ranked second in revenue for Chinese Taipei's private-owned manufacturers.

Being a key manufacturer in Chinese Taipei, CSC is also an internationally recognised steel company. The company's crude steel production will exceed 8 million metric tons by the end of this year. The establishment of China Steel not only upgraded the quality of steel in Chinese Taipei, but also changed the image of Chinese Taipei in the international steel market.

The privatisation of China Steel

The trend of liberalisation and privatisation has left no country and no industry untouched. Every government in the world including Chinese Taipei joined in. China Steel was one of the 22 state-owned companies on the front-row of privatisation. The reason for privatising CSC was twofold: First, it had fulfilled its duty in supporting the development of the local steel industry, a timely privatisation would restructure the industry quickly. Second, our Government held the view that only privatisation could invigorate the market mechanism and raise efficiency in the industry. Since the capital amount of CSC was so huge, the privatisation process took about six years, being completed only in 1995.

There were two advantages in privatising China Steel: 1) decision-making become more flexible; and 2) budgeting become more practical. First, immediately after privatisation, CSC was bound

by the provisions of Company Law instead of the “Provisions for Public Enterprise.” The Board of Directors became the highest decision making organism and management decisions were no longer confined to orders of the legislative and executive departments. Capital expenses and diversification plans now only require approval from the Board. As to material procurement and contracting, decisions were made on the basis of quality and operational efficiency, but not in accordance with the provisions of the account and audit rules for public enterprises. In fact, privatisation had contributed to the earlier than expected completion of the furth expansion plan.

Second, although China Steel has been able to avoid the pitfalls of a state-owned company and perform excellently, the company was not totally free from the entanglements of being a state-owned company. For example, China Steel had to abide by a rigid budget system. As a state-owned enterprise, CSC had to submit its budget plans one and a half years before the beginning of an accounting year. As a privatised enterprise, it needs only submit the budget half year in advance, which has enabled the company to take concerted action towards environmental transition and tallies with actual operations. This more realistic budget could be put into practice immediately after approval by the Board of Directors.

IV. Targets and policy of the steel industry in the future

From the development process of the steel industry in Chinese Taipei, one can see clearly how important the role played by the government has been. Along the way, the government has moved gradually behind the scene, changing from “a player” into “a moderator or rule-maker.” Since there is room for expansion and improvement in the size and industrial structure of the steel industry in Chinese Taipei, the government still has a role to play in the foreseeable future. I would like to discuss briefly the targets and policy of this government in regard to the steel industry.

A higher self-sufficiency rate

Chinese Taipei can only supply half of the crude steel it needs now. The government’s short term target is to raise the ratio to 70 per cent and to 100 per cent in the long run. In order to achieve this goal, our Government has actively encouraged domestic enterprises to invest in a large-scale steel production plant, by providing assistance in matters of land acquisition, water and electricity supply, and financing.

At this moment, Chinese Taipei produces 13.65 million metric tons of crude steel. Another 15.78 million metric tons of crude steel production are under construction. If everything proceeds smoothly, the future crude steel production in Chinese Taipei will reach 53.13 million metric tons. Among the production plants under construction, the most conspicuous is the second integrated steel mill in Chinese Taipei, a Yieh Loong Group investment. In order to show support for this grand project, our government has not only provided assistance in financing, but has also helped the Group acquire the land they need.

Restructuring the industry

Low end products such as steel bars constitute the mainstream of steel production in Chinese Taipei, which account for 50 per cent of the total steel production. While high quality steel products are imported from other countries, mainly from Japan and Germany. In this regard, a lot of effort has to be engaged in raising the production volume of high value steel products. With this aim, our Government’s

policy has been to encourage and to assist domestic steel companies in the production of special steel, multi-level processing and high value-added steel products.

Provide support to downstream industries

The steel industry is closely related to a wide variety of downstream industries, which include metal manufacturing, machinery, transportation vehicles, electrical equipment, and shipbuilding. One clearly defined goal for the steel industry is to provide high quality steel products to these industries so that their products can be competitive in the world market. In order to achieve this goal, the so-called “Center Satellite Factory System” was constructed, where the CSC works as the center firm and the downstream producers as the satellite firms. Such a system is quite common in Chinese Taipei’s enterprises. The downstream firms joining the network accounted for only about 12 per cent of China Steel customers, but they bought about 66 per cent of its production. This reveals how closely related CSC is with its downstream satellite firms.

Furthermore, the network of “upstream and downstream steel industry” has made enormous contributions to the technological advancement, management rationalisation and product marketing of downstream industries. The focus in the future will be on assisting downstream industries in production automation, information-based management, and strategic integration in outward investments.

The establishment of a competitive market

The gist of our Government’s competition policy is to promote fair competition in the market. No firm is allowed to abuse its market status in exercising unfavourable influence on production, distribution and price. Up to today, not a single steel producer in Chinese Taipei has been listed by the Fair Trade Commission as monopolising the market. In addition, our Government is paying attention to whether there have been any illegal commercial actions such as private agreements or price collusion among steel producers. In the case that any illegal action is discovered, this government would launch a lawsuit against the offender.

The Fair Trade Commission has also been looking closely at the co-operative relationship between an upstream firm such as CSC and the downstream firms in the steel industry. The concern is whether the co-ordination of production and distribution between these firms is justifiable as a matter of economic consideration and whether downstream firms have been treated unfairly by China Steel. Nothing wrong was found though.

Steel trade policy

As mentioned at the beginning, countries have protected their steel industry through tariff or non-tariff measures, despite the fact that we have much freer trade than before. In this regard we are very proud to say that Chinese Taipei is among the small number of countries which have opened their doors to steel product imports.

Since 1984, Chinese Taipei has been determined to lower its tariffs on steel products and all import barriers have been lifted. The tariffs on raw materials and semi-finished products are now as low as from 0 to 2.5 per cent; the tariffs for finished steel products are currently in the range of 6 to 10 per cent. In order to fulfill the requirements for joining WTO, the government has decided to reduce the tariffs on steel products to 0 per cent in ten years. Since there are no barriers to steel product imports and the tariffs

are quite low, the steel industry in Chinese Taipei has to face the problem of dumping. We have now set up a commission under the Ministry of Economic Affairs to take care of dumping issues.

V. CONCLUSION

Chinese Taipei is small in size and possesses only limited amounts of natural resources. After 20 years of development, the steel industry has flourished with the economy. Now Chinese Taipei has become an important producer of crude steel in the world. Hence, we can proudly say that the “Chinese Taipei Experience” represents a successful case for development of the steel industry.

Looking back at the history of the steel industry, there were only small-sized mills scattered around the island before the birth of CSC. There were a large number of firms, the product quality was low, and the risks of operating a steel plant were enormous due to uncertainty in the supply of crude steel. The situation changed greatly after the government set up to the CSC. A steady supply of raw materials for the downstream steel industry made it possible for local enterprises to produce a larger variety of steel products, both for the domestic market and for export. Moreover, the integrated production of crude steel has contributed to the improvement of product quality in the steel industry. Other downstream industries such as shipbuilding, machinery, transportation vehicles, etc. also benefited greatly in the respect that higher quality steel products are available for their production.

Having done so much in the development of the steel industry in Chinese Taipei, maybe it is time for the government to reconsider its role. In fact, the government is determined to divert its efforts to supporting investment from the private sector and to establishing an efficient and fair environment for the domestic steel industry. Privatisation of China Steel was a very important step in that direction.

COMPETITION POLICIES AND THE INTERNATIONAL STEEL INDUSTRY

BY

MR. CHARLES OWEN VERRILL, JR.
PARTNER OF WILEY, REIN & FIELDING³

Introduction

This paper considers competition policies in the context of the international steel industry. For the purposes of this paper, competition policies are deemed to be those governmental measures (including laws and regulations) that are designed to maintain open and competitive markets.⁴ Such measures typically regulate certain types of business conduct by private companies or persons either alone or in combination with others. In many jurisdictions, including the United States and the European Union, the laws and regulations that implement competition policy are styled antitrust laws.

The last decade has witnessed a substantial change in governmental attitudes toward business regulation. Many nations have been steadily increasing their reliance on "market forces rather than state direction as a means of determining the production and distribution of goods and services."⁵ In this environment, antitrust laws are necessary to ensure the realization of the benefits of a competitive marketplace and to maximize consumer welfare.

In the United States, and in many other countries, the antitrust laws are designed to protect competition and the competitive process, not companies or competitors. Competitive behavior of companies is not restrained -- even if aggressive and harmful to competitors -- as long as there are no predatory or monopolistic circumstances. It should be noted, however, that certain antitrust regimes are based on a "dominance" concept that places more emphasis on protecting smaller competitors even at the expense of immediate gains in consumer welfare.⁶

An objective of the antitrust laws is a marketplace where consumers have the opportunity to select among competing offers from suppliers. All else being equal, it is assumed that the consumer will

3. Partner, Wiley, Rein & Fielding, 1776 K Street, N.W., Washington, D.C. 20006. Peter S. Jordan of Wiley, Rein & Fieldings very ably assisted in the preparation of this paper.

4. Specifically excluded from this definition are measures that establish minimum prices or limit market access, such as controls on additional investment.

5. The Basics of Antitrust Policy, World Bank Technical Paper Number 160, by Roger Alan Boner and Reinald Krueger at XI (1991) (hereinafter "Boner-Krueger").

6. Boner-Krueger conclude, however, that "most of the economies surveyed that rely on a dominance concept have altered enforcement standards over time to strengthen market power and economic efficiency as the basis for competition law." Boner-Krueger, at 17.

select the lowest price. When suppliers must compete on the basis of price, and lose sales if they do not, prices are lower than they would be in the absence of competition. Thus, consumer welfare is enhanced by the competitive establishment of prices.⁷

Antitrust laws typically address four types of private conduct by corporations and individuals that, if not regulated, would result in a diminution of competition or an abuse of dominant position. These categories of conduct, while not exclusive, appear to be the most likely to interfere with the competitive market and -- if not restrained -- would enable firms to increase prices or otherwise deny consumers the benefits of a competitive marketplace.

First, competition laws typically regulate the merger or the acquisition of competing firms. The purpose here is quite obvious. When the number of firms offering a product to the consumer is reduced by merger or acquisition, the result may be a significant lessening of competition in the sale of that product. Therefore, most antitrust laws provide for restrictions on the ability of competing firms to merge or acquire competitors. If a merger or acquisition would significantly reduce competition and thus increase the opportunity for noncompetitive pricing, then it may be prohibited or otherwise restrained. Time-Warner and Turner Broadcasting, for example, avoided challenge from the U.S. authorities by agreeing to conditions on corporate governance designed to ensure continued competition as part of their merger agreement.⁸

Another form of private conduct typically prohibited by competition laws is price fixing by agreement among competing firms. Here the number of competitors remains the same after the agreement is reached, but competition itself is reduced because the competitors have agreed not to compete. Thus, the effect on the consumer is very similar to what occurs in the case of a merger or acquisition. Typically, price fixing is considered a violation of antitrust laws so serious that proof of the agreement alone is sufficient to amount to a violation (a "per se" violation). The gravity of these violations is illustrated by the recent US \$100 million fine (the largest ever in a U.S. criminal antitrust case) imposed on Archer-Daniels-Midland Co., for price fixing in the global citric-acid industry.⁹

While lower prices are usually an objective of competition laws, there are circumstances where unreasonably low prices can be challenged if there is a risk that competitors will be driven out of business leaving the survivor free to raise prices. This form of business conduct is known as predatory pricing. In the United States, the antitrust authorities will only consider action against prices that are below average variable costs (raw materials, energy, and labor). Any price that is above average variable cost is deemed economically rational because it would be more efficient to produce and sell the product than not. Since such prices are economically rational, they are not regulated by the antitrust laws no matter what the motives of the seller or the effect on competitors.¹⁰

7. "In the United States, antitrust law has long been recognised as a primary tool for ensuring openness of markets to new competitors, so that prices for consumers will remain as low as possible, with easy entry of new competitors" Address by Anne K. Bingaman, Assistant Attorney General, Antitrust Division, U.S. Dept. of Justice, New York, March 3, 1994, at 2 (hereinafter "Bingaman").

8. Time, FTC Staff Agree on Turner Deal, Wall Street Journal, July 18, 1996, at A3.

9. ADM's \$100 Million Price-Fixing Fine Blows Lid Off Usual Maximum Penalty, Wall Street Journal, October 16, 1996, at A4.

10. There are, however, laws that regulate price discrimination and certain state laws that take a more restrictive position on below cost pricing.

Even when prices are below average variable costs, there is authority in the United States for the proposition that predatory pricing is contrary to law only if there is a probability that the seller will achieve a monopoly. Pursuant to this view, antitrust enforcement is not warranted unless this probability is demonstrated, no matter how low the prices are and no matter how injurious they are to other producers. This approach is consistent with the antitrust law emphasis on consumer welfare since action against predatory prices (which in and of themselves provide immediate benefits to consumers) is only taken where the seller is likely to succeed in driving competitors out of the marketplace. Action is justified because, when that happens, the seller thereafter can price without competitive restraint.

Finally, there are a variety of arrangements among competitors that have the effect of reducing competition. These include customer boycotts, standards manipulation, and the like. One example would be a vertical arrangement whereby a steel company with market power refuses to supply any stockhouse that carries imported steel. If the steel company's products are in such demand that carrying them is essential to the economic success of distributors, the likelihood is that they will acquiesce and carry only domestic steel. These and similar arrangements typically have, of course, the same effect as price fixing or mergers. They exclude or limit competition and, therefore, deny consumers the benefits of an open marketplace.

In summary, the practices that are regulated by antitrust laws are generally those actions or arrangements that are aimed at reducing competition. Since those practices affect competition not only from domestic sources but also from imports, they have the potential for limiting market access and can have, for that reason, the same effect as high tariffs, quotas, or other governmental trade barriers. Private anticompetitive practices have, therefore, the potential to reduce or offset the market access objectives of the General Agreement on Tariffs and Trade ("GATT") and World Trade Organization ("WTO"). As Sir Leon Brittan and Karel Van Miert put it recently, "anticompetitive practices affect the balance of access opportunities negotiated between WTO Members."¹¹

The market access opportunities achieved in 50 years of multilateral trade negotiations are considerable. Eight rounds of tariff negotiations have succeeded in dramatically reducing average tariffs, particularly in the industrialized countries. In the case of steel, the zero for zero tariff negotiation in the Uruguay Round will result in tariff free markets in many countries after a phase-in period. However, as markets open and import competition increases, there is a very real risk that companies will resort to boycotts, vertical restraints, cartels, and other competition reducing measures to protect their home markets:

Arguably, the incentive for firms to engage in anticompetitive behavior impeding market access, (such as cartels, combined with boycotts, exclusionary abuse of dominant position, exclusionary vertical restraints) increases with the reduction of tariffs and other barriers.¹²

Brittan and Van Miert also point out that, "as industrial structures in emerging economies increase in sophistication, so will the devices used by firms to protect the market from foreign competition."

11. Toward an International Framework of Competition Rules, Communication Submitted by Sir Leon Brittan and Karel Van Miert, 17 June 1996 (hereinafter "Brittan-Van Miert").

12. Brittan-Van Miert, at 5.

Notwithstanding the risk that private restraints will offset the gains in market access secured by multilateral negotiations, neither GATT 1994 nor the WTO Agreements specifically deal with private barriers to trade. Brittan-Van Miert observe, in this connection, that:

While governments today are subject to very strict international disciplines in respect of the laws they make or the measures they apply, as soon as these have an effect on trade, no rules exist at the international level to control anti-competitive commercial measures.¹³

The lack of such rules, together with the potential that private practices have for interfering with the achievement of market access objectives, would seem to indicate that competition policy would be on center stage in the WTO and other multinational fora. However, as we will demonstrate, concerns about sovereignty, prosecutorial discretion, and where the path may lead if negotiations over competition policy are commenced at the multinational level, indicate that adoption of competition rules by the WTO may be very difficult to achieve.

Yet, there would seem to be abundant (if only anecdotal) evidence that such rules are indeed necessary. In the next section we examine a variety of private practices that are alleged to exist in the international steel industry and which would appear to have the potential for an adverse impact on the attainment of the goals of multilateral market access measures. Then, there is an examination of some of the more notable initiatives toward the development of multilateral competition rules.

This paper does not consider the relationship between competition policies and the existing trade remedies such as antidumping and countervailing duty laws. While there have been many commentaries on this issue, and decidedly different points of view,¹⁴ the majority would appear to agree with Brittan-Van Miert who argue that "competition instruments cannot be seen as substitutes for trade instruments." Such trade instruments only "lose their *raison d'être* in the context of fully integrated markets." Short of that, a "framework of competition rules would, therefore, complement present trade laws and create a new instrument to tackle anticompetitive behavior in markets which are not integrated."¹⁵

1. Examples of anticompetitive practices that are alleged to exist in international steel trade

A search of the literature produced a thick stack of articles concerning alleged anticompetitive practices in international steel trade. Although there are many claims, there has been very little, if any, official confirmation that such practices are, in fact, employed. It may be, of course, that such practices do exist, but that existing laws or enforcement policies are inadequate to deal with them. In any event, the following compilation is intended only to illustrate the types of practices that are widely believed to exist and which could have such an effect on trade that multilateral competition rules would be justified.

13. Id.

14. See, e.g., Stewart and Brighthill, Some Heretical Observations on the Interaction of U.S. Trade and Competition Laws, for U.S. Mexico Law Journal, 35 (1996). The authors of this article take issue with the Report of an American Bar Association ("ABA") Task Force that recommends consideration of replacement of trade remedies with competition policies in NAFTA.

15. Brittan-Van Miert, at 13.

a. *Export cartels*

One of the most widely discussed practices is the London or East of Burma Agreement which is alleged to exist between European, Japanese and Korean steel mills. According to the reports, this agreement divides the world steel markets using Burma as the line of demarcation: under its terms, the European mills limit their shipments to Japan and nearby markets, and the Japanese and Korean mills are said to limit their sales to Europe. Citing statistical evidence that shows minimal shipments of steel from Japan to Europe and Canada and from Europe to Japan and nearby markets, U.S. producers have argued that this arrangement results in substantial flows of EU and Japanese steel to the United States.¹⁶ In other words, it is argued, the European and Japanese steel mills have agreed to stay out of each others' market and use the U.S. market as the dumping ground for surplus production.

Assuming for the sake of argument that there is such an agreement (no government agency has confirmed its existence), there are some interesting analytic points. It could be argued, for example, that if in fact more steel is shipped to the United States because of a cartel, then U.S. consumer welfare is enhanced because increased steel flows result in more competition and, presumably, lower prices. However, the producers would respond that the longer term effect could be deleterious if new investment is deterred or existing mills are unable to continue as viable competitors. Of course, consumer welfare in Europe and Japan is presently affected since the domestic producers in those countries have taken action to remove competitors from their home markets.

The effectiveness of an export cartel would appear to depend on the ability of the participants to protect their home markets. What purpose would be served, for example, by exclusion of Japanese steel from the European market if there is free access to that market by producers that are not part of the cartel? As Boner-Krueger point out, "liberal trade policies may provide a means of circumventing attempts by some domestic firms to exercise market power or abuse their dominant positions."¹⁷ It would seem likely then that the GATT and WTO market access achievements have indirectly served to limit the effectiveness of cartels, at least in those countries where other non-tariff barriers do not restrict access to markets. On the other hand, where cartels are combined with other private exclusionary measures that are not affected by WTO rules, then they can be very effective in defeating the purpose of multinational market access rules.

b. *Market sharing and price fixing*

Recently, a paper surfaced in Washington which purports to be the minutes of a meeting of oil country tubular goods ("OCTG") producers. These minutes include a "sharing key" that allocates worldwide markets for OCTG. For example, "(J)" was allocated 85 per cent of the "F.East" market and 0 per cent of the European market. "(LA)" was allocated 100 per cent of "LA" and 63 per cent of the "M.East." The minutes also show that a "\$50 increase of price was agreed."

The price fixing feature of this reported arrangement would also seem to require additional exclusionary practices to be effective. If, for example, the producers in a country agree to fix prices, the market would become attractive to imports, particularly if access is not restrained by trade barriers. Thus, the price fixing agreement could only be effective if the producers find a way to exclude import

16. Iron Age New Steel, February, 1995, at 9.

17. Boner-Krueger, at 19. They also note that "restraint of trade by the domestic sector would be rendered unfeasible as long as foreign suppliers behaved competitively." *Id.*

competition. By the same token, market allocation schemes will only be effective if they include most -- if not all -- of the potential competitors or if the participants are able to erect private barriers to preserve the efficacy of the allocation.

c. *Group boycotts; Vertical restraints*

There have been many reports that imports of steel have been deterred by group boycotts by steel traders and distributors directed at imported steel. A recent article in *Iron Age New Steel*¹⁸ reported, for example, that Japan's nine largest trading companies, who account for more than 50 per cent of import trade, do not import "a single ton of finished steel." The article quotes Mario Yokoyoma, President of Taisei International Corp., who claims that the "big traders are afraid they would forfeit their distribution rights if they incur the wrath of their big clients." Another trading company executive quoted in the article said that after entering into a contract to purchase a shipment from Taiwan, "a big Japanese steelmaker learned about this 'clandestine' deal and immediately stopped all shipments to this trading firm, which then was plunged into a business crisis."

Non-price vertical restraints of this type clearly prevent "efficient market operation and market access"19 In any event, unlike price fixing or cartels, which arguably have little effectiveness when markets are otherwise open to nonparticipants, exclusionary practices -- such as boycotts or concerted efforts to limit imports -- work directly to defeat the very objective of market access measures without the need for companion measures. Moreover, exclusionary tactics can be every bit as effective as prohibitively high tariffs or quotas in denying market access and directly "affect the balance of access opportunities negotiated between WTO members."²⁰

d. *Collusive manipulation of product standards*

Product standards have obvious, legitimate roles in the marketing of steel in both domestic and international markets. When such standards are transparent and establish objective criteria, they can be an important competitive tool and of enormous advantage to consumers. Indeed, the WTO Agreement on Technical Barriers to Trade recognizes these beneficial effects²¹ and establishes criteria for the adoption of standards to ensure that they do not create "unnecessary obstacles" to international trade. Despite the beneficial role of product standards, there is also the possibility that steel producers could manipulate product standards to disadvantage imports. For example, domestic steel producers could collusively work for adoption of a product standard that has no technical or commercial significance but is difficult for imports to meet. In one instance we are aware of, producers in a country secured adoption of a "straightness" standard for structural steels that was difficult to meet for products shipped by ocean, but could not be justified on any objective criteria. Obviously, such practices can have a significant effect on the ability of offshore competitors to gain market access.

18. Iron Age New Steel, March 1996, at 48-50.

19. Bingaman, at 3.

20. Brittan-Van Miert, at 4.

21. The Preamble to the Agreement states: "Recognising the important contribution that international standards . . . can make . . . by improving efficiency of production and facilitating the conduct of international trade"

e. Trade associations

Trade associations often play a vital role in the commerce of a nation. In Japan, for example :

the government has tended to use trade associations as instruments for furthering government policy and . . . trade associations use the Japanese government to further their own members' business interests. Japanese ministries have frequently used trade associations to communicate administrative guidance to industry members and 'frequently give associations a formal or informal role in the application process for obtaining licenses As a result, membership in Japanese trade associations is important to business success in Japan.²²

The U.S. government, while eschewing any suggestion that trade associations are inherently anticompetitive, has long argued that in a substantial number of cases, Japanese trade associations are closed to membership by foreign companies. In these circumstances, the inability to obtain the benefits of membership functions as a trade barrier.

In an effort to deal with criticisms such as those voiced by Assistant Attorney General Bingaman, the Japanese government issued guidelines on the activities of trade associations in October, 1995, which are intended, according to the U.S. Trade Representative, to "prevent industry associations from engaging in anticompetitive business activities that impede foreign companies from competing successfully in Japan." At the same time, USTR noted that "Japanese legal remedies and antimonopoly enforcement efforts still fall far short of that needed to ensure that Japanese markets are open to competition from U.S. and other foreign competitors."²³

f. International operations

Transnational firms and joint ventures are a fact of life in today's world, in which the markets for many goods and services are global. To deal with these developments, firms have been driven "to adopt new production methods; exploiting the comparative advantage of countries, improving their mobility, shifting factors of production, moving into new markets, etc."²⁴ According to Brittan-Van Miert, this international dimension :

can lead to an increase in cross-border anticompetitive practices: cartels with international effects, agreements whose effect is to exclude (foreign) competitors in an unfair way, international abuses of dominant position, or international mergers with anticompetitive effects.²⁵

These activities, which are often beyond the reach of domestic competition authorities, are yet another way in which private practices undermine trade liberalization.

22. Bingaman, at 5.

23. U.S. Trade Representative, 1996 National Trade Estimate Report on Foreign Trade Barriers, at 197.

24. Brittan-Van Miert, at 3.

25. Id.

2. Inadequacy of national laws to cope with many anticompetitive practices

Even the most developed competition laws share a common limitation. Whether the conduct at issue is concerted or unilateral, the Sherman Act (United States) and the Treaty of Rome (European Union) ordinarily require that the conduct be shown to have as its object or effect the prevention, restriction, or distortion of competition within the jurisdiction. The effect on competition is usually defined in terms of an impact on consumer welfare, such as increased prices or restricted supply. This requirement of a domestic competition effect means that competition authorities usually will not challenge conduct which takes place outside their borders and has no direct and immediate effect within those borders.

There are, of course, a substantial number of countries that do not have antitrust laws at all. Other countries, according to an ABA Report, "have laws that are ineffective."²⁶ And, this Report notes:

Some foreign laws are relatively 'toothless,' making violations difficult to prove or establishing very light penalties. Enforcement authorities are frequently underfunded, and in many newly emerging markets, these authorities have to devote most of their time to fending off efforts by other government agencies to reimpose old elements of a closed economy.

Another problem is that many countries have adopted comprehensive competition laws but for various reasons have not enforced them. As Brittan-Van Miert point out:

Many countries or regions have implemented comprehensive competition policies, but lack appropriate instruments to apply domestic competition rules to anti-competitive practices with an international dimension. . . .²⁷

And, even where the instruments exist, the commitment to enforcement may be weakened by other goals. Boner-Krueger point out, for example, that the "exemption of anticompetitive conduct in pursuit of economic goals other than competition has resulted at times in relatively weak antitrust policies in the U.K., Spain, Japan, South Korea, and Sweden."²⁸

Commentators have also pointed to the difficulty of obtaining proof of international anticompetitive conduct where the activities take place in a number of countries. There are legal and practical problems associated with obtaining evidence in multiple jurisdictions, particularly if one or more of them is disinclined to cooperate. National courts may lack jurisdiction over the entities that are believed to be engaged in anticompetitive conduct. And, it may be difficult to fashion a remedy where there are multiple jurisdictions involved.

Finally, there is no real consensus on competition policy. In the United States, the focus of competition policy is on market power, attainment of maximum economic efficiency, and obtaining consumer welfare benefits. In other economies, particularly in Europe, "competition policy also serves political and social goals." Such policy, for example, is "designed to defend the individual right to engage in commerce in open markets and to dilute the power of dominant enterprises." This policy, it should be

26. Report, Using Antitrust Laws to Enhance Access of U.S. Firms to Foreign Markets, American Bar Association, Section of International Law and Practice, 29 *The International Lawyer* 945, 950-951 (Winter, 1995).

27. Brittan-Van Miert, at 3.

28. Boner-Krueger, at 118, n.285.

noted, sometimes "attenuates the degree to which competition policy promotes economic efficiency."²⁹ And, beyond these policy differences, Boner-Krueger found many, many variations in the way specific types of anticompetitive conduct are treated under the competition laws of the countries they surveyed.³⁰

3. Developments in the evolution of competition policy on a multilateral scale

While private anticompetitive practices can constitute barriers to trade, and can impair the benefits of increasing global trade liberalization, the world's trading economies have taken only limited steps to develop a binding multilateral framework of competition rules. The initiatives that have been taken in this area have yielded non-binding agreements, such as the 1980 UNCTAD Restrictive Business Practice Code and the 1986 OECD Recommendation, or very targeted competition disciplines such as those referenced in the WTO agreements on Trade Related Investment Measures ("TRIMS"), Trade Related Aspects of Intellectual Property ("TRIPS"), and General Agreement on Trade in Services ("GATS").

In addition, bilateral cooperation agreements exist between competition authorities in a number of countries. The United States and EU concluded such an agreement in 1991 which includes a novel "positive comity" principle. This reciprocal commitment allows a party whose important interests are affected by anticompetitive practices within the other party's territory to request the latter to examine those practices and take appropriate measures. The TRIPS Agreement also incorporates the positive comity principle.

On the whole, multilateral efforts to arrive at understandings on competition issues have been limited in scope and effect. The initiatives that have been taken include the following:

a. *OECD competition policy*

The OECD has for years promoted international cooperation in the development of competition policies. The 1976 OECD Guidelines for Multinational Enterprises contained a chapter on competition calling on enterprises "to refrain from actions which would adversely affect competition."³¹ An OECD Council Recommendation concerning cooperation between Member countries on restrictive business practices affecting international trade was most recently revised in 1995.³²

The Recommendation sets forth guiding principles regarding notification, exchange of information, coordination of action, consultation, and conciliation between Member countries on anticompetitive practices. It urges national competition authorities to notify others concerning anticompetitive activities of private concerns, and to coordinate their action in taking remedial measures. There is also a voluntary and non-binding dispute resolution procedure (conciliation), but it has never been used. The Recommendation, while it does not endeavor to create substantive competition principles for multilateral application, does seek to strengthen bilateral enforcement cooperation.

29. Id. at 2.

30. Id. at 22-46.

31. OECD Guidelines for Multinational Enterprises, Chapter 4.

32. Recommendation of the OECD Council, July 27 and 28, 1995 (C(95)130/Final). A further Recommendation on Cupertino between member countries in areas of potential conflict between competition and trade policies was adopted by the Council on October 23, 1986 (C(86)65/Final).

b. *The Munich Group's 1993 Draft International Antitrust Code*

A group of prominent scholars convening in Germany and Switzerland from 1991 to 1993 (the "Munich Group") authored a Draft International Antitrust Code and presented it to GATT Director General Peter Sutherland in July, 1993. This Draft Antitrust Code, which was conceived as a GATT agreement, is an attempt "to bring international antitrust law into conformity with the needs of international business life" by establishment of a comprehensive set of competition rules. The Munich Group noted that the GATT "is at the heart of the world trading system" and, therefore, "is where antimonopolistic and procompetitive rules on international trade and commerce should be integrated."³³

The Draft Code sets forth substantive competition rules which are designed to open markets, terminate export cartels, fashion a common rule of predation and dumping, establish common rules for clearing mergers and acquisitions, and promote the process of convergence of competition regimes. The proposal contemplates that the rules would be binding on signatories and enforced by means of an International Antitrust Authority. In addition, decisions by national competition authorities and courts would be reviewable before an International Antitrust Panel and governed by the GATT (now WTO) dispute settlement procedures.

Notably, some members of the Munich Group criticized the Draft Code and instead urged a "minimal approach" that allows a "wide berth" for differences in national law. This internal disagreement illustrates the profound difficulties governments face in reaching a consensus on a broad competition policy code. In all likelihood, the WTO would likewise find it very difficult to reach agreement on competition policy in the form of an explicit code or core set of principles.

c. *Proposal to add competition policy to the WTO Agenda*

As we approach the first WTO ministerial conference to be held in Singapore on December 9-12 of this year, member countries are exploring various proposals to add new issues to the WTO's agenda. Some members, most notably the European Union, have suggested the formation of a WTO working group on competition policy.³⁴ Brittan and Van Miert argue that the WTO is the prime candidate for housing a coherent framework of international competition rules because of its near universal membership, established institutional structures (particularly the dispute resolution system), and broad expertise with trade-related international economic issues.

An alternative considered by Brittan-Van Miert -- an international competition authority, with powers of investigation and enforcement -- was rejected as "not a feasible option for the medium term."³⁵ They point out that such an authority would impinge on the sovereignty of member countries, and that it would be much better to utilize the model that has evolved under GATT and which is the basis for most WTO obligations.

Brittan-Van Miert advocate a progressive, or "building-blocks," approach to developing a multilateral competition framework within the WTO's auspices. The first step, and considered the most

33. Draft International Antitrust Code, July 10, 1993, §11, reprinted in 64 Antitrust & Trade Reg. Rep. (BNA), Special Supp. at S-3 (Aug. 19, 1993).

34. See generally, Brittan-Van Miert, at 9-15.

35. Id. at 12.

readily achievable, would be for WTO Members to adopt "domestic competition structures." The "core elements" of these structures would be:

- . . . basic competition rules in domestic laws to address anticompetitive practices, covering restrictive agreements of companies, abuse of dominant position, and mergers;
- . . . domestic enforcement structures to guarantee an effective implementation of those rules, including proper investigatory instruments and appropriate sanctions;
- . . . access for private parties to the domestic enforcement authorities, including national courts, on equitable, transparent and nondiscriminatory terms.³⁶

These minimum requirements would be readily met by developed countries, but many developing countries which do not now have a system of competition laws and/or the enforcement machinery in place would have to adopt them if the minimum requirements were to be adopted as WTO obligations.

A parallel step envisioned by Brittan-Van Miert would be the identification of "common principles" that all parties would be urged to adopt. The objective would be to promote "equal conditions of competition worldwide" and a "gradual convergence of competition laws." The consideration of core principles would begin with a concentration on horizontal restraints such as "price or output fixing or market sharing cartels, bid-rigging, group boycotts, [and] export cartels." They suggest that work also begin on other practices such as "abuse of a dominant position, certain vertical restraints such as exclusive distribution or supply agreements," but suggest this work "may take more time."

Another step would be to implement specific provisions for cooperation between national competition authorities. These rules could cover issues such as notification, information exchange, and other cooperation procedures. A key element of cooperation between national authorities is the so-called "positive comity" instrument.³⁷ Under this principle, Members would be obligated to investigate, within reasonable limits, anticompetitive practices within its jurisdiction upon request of another Member state and to notify the requesting party whether or not enforcement action is envisaged. A decision not to act would have to be reasoned and supported by relevant factual material. Enforcement discretion would remain in the hands of the national competition authorities.³⁸ This type of mechanism has been included in existing bilateral cooperation agreements, and therefore should have some inherent degree of acceptance.

The last step advocated by Brittan and Van Miert, and perhaps the most controversial, would be to incorporate the WTO dispute resolution procedures. According to their proposal, the

WTO mechanisms could be applied if a country for example fails to set up a domestic competition structure or if it fails to react in a specific case to a request for enforcement action lodged by another WTO member.

This aspect of the proposal raises many difficult questions, such as the standard of review for dispute panels and the remedies that may be authorized for a violation.

36. Id. at 12.

37. This is not an antitrust rule, but a co-operative mechanism to facilitate cross-border law enforcement.

38. Brittan-Van Miert, Annex at 4-5.

Under one scenario, panels would be authorized to review only procedural issues such as whether a party has satisfied the investigatory requirements of the positive comity commitment in response to a specific request for enforcement action lodged by another WTO member.³⁹ Panel authority could also be extended to substantive matters, such as whether the competition laws adopted by a country are appropriate or whether the stated reasons for a non-enforcement decision by the national competition authority are adequate.

Another problem is what enforcement measures will be available if a panel concludes that a party has "violated" the procedural or substantive obligations. Here Brittan-Van Miert suggest -- as perhaps the most viable option -- "measures usually foreseen in the trade context, such as the withdrawal of tariff concessions"⁴⁰ They note, however, the conundrum that "the withdrawal of trade concessions may seem to contradict the objective of increasing competition, as its effect would be to lessen access opportunities to a market." However, as they also note, the "ability to withdraw trade concessions has actually had a liberalizing effect, and has pressed countries to bring their practices into line with GATT law."

The Brittan-Van Miert proposal has -- to put it mildly -- met less than an enthusiastic response. Some European antitrust lawyers, for example, have complained that this proposal would amount to a foisting off of EU competition law on the rest of the world. They argue that EU law has become encumbered with "baggage" over a number of years, which needs to be reexamined, not universally adopted.

In the United States, Acting U.S. Trade Representative Charlene Barshefsky in recent testimony before the U.S. House of Representatives, Subcommittee on Trade, stated that the broader issue of competition policy is not "ripe" for negotiation in the WTO framework.⁴¹ As in the past, the U.S. government continues to be wary of any effort to promote the establishment of multilateral competition rules. The fear is that a global competition framework could infringe on U.S. sovereignty by requiring changes to its national antitrust and/or antidumping laws. Another fear is the potential for dispute resolution to restrict or compromise prosecutorial discretion. Given these concerns, Ambassador Barshefsky suggested a more modest and cautious effort to begin a limited educational program on competition issues within the WTO. However, she offered no specific proposals.

Proposals to undertake a competition policy initiative at the WTO have also met resistance from developing countries. These countries cite primarily the lack of consensus on scope and goals of an international competition framework. Even basic tenets of competition policy may not have wide acceptance in some Third World countries. Developing nations prefer a more gradual approach, and seem to agree with the U.S. position that further study through other international fora, such as the United Nations Commission on Trade and Development,⁴² is necessary before the issue is brought to the WTO for negotiation.

39. Id., Annex at 4-5.

40. Id., Annex at 5.

41. Statement of Ambassador Charlene Barshefsky, Acting United States Trade Representative, before the Subcommittee on Trade of the Committee on Ways and Means, U.S. House of Representatives, 11 September 1996.

42. As noted earlier in this paper, UNCTAD has already considered various aspects of competition policy.

One interesting reaction to the proposal to put competition policy on the WTO agenda has come from certain developing countries who fear interference with their industrial policies. According to a Reuters Financial Service Report, these countries argue that the EU competition initiative "appears aimed at dismantling their national monopolies to clear the way for penetration by big global corporations."⁴³ It seems rather obvious that those advancing these arguments place a low priority on consumer welfare.

d. The ACTPN report on competition policy

The Advisory Committee on Trade Policy and Negotiations ("ACTPN"), a trade advisory group appointed by the President of the United States, echoed the Clinton Administration's reluctance to commence WTO work on competition policy at the December ministerial. The ACTPN Report on Competition Policy, released in September, cautioned that the link between trade and competition policy is "new" and "very complex," and that the U.S. government should study the issue extensively in consultation with the private sector before considering any international action. The advisory group concluded that "the time is not yet ripe for the WTO to engage in any competition policy initiative."⁴⁴

The Report called for further study on a variety of issues, including the effect new competition agreements could have on U.S. law, the relationship between international rules and national discretion, and the nature of the market access and antitrust issues to be addressed in the international context. Other concerns are the extent to which existing competition laws are actually enforced and the extent to which government policy measures affect anticompetitive actions. Given these private sector concerns, it is unlikely that the U.S. government will be quick to embrace WTO or other international initiatives on competition policy.⁴⁵ Instead, the preferred U.S. course is to maintain the current bilateral approach to antitrust cooperation agreements while studying multilateral issues.

Notably, the Advisory Committee strongly discouraged any attempt to link competition policy with antidumping regimes and stressed the importance of maintaining the careful balance reached in the Uruguay Round Antidumping Agreement. Any attempt to join these two issues would certainly be met with strong opposition in the United States and could derail any future WTO initiatives on competition policy.

e. Elements of competition policy in the basic telecommunications services (GBT) negotiations

Despite the U.S. government's reluctance to endorse a working group on competition policy at the Singapore ministerial, it has promoted the adoption of basic competition principles in various sector-specific trade agreements. A prime example is the ongoing basic telecommunications negotiations at the WTO. The WTO working group approved a set of pro-competitive regulatory principles for inclusion in the draft agreement, which is not yet finalized. These binding regulatory commitments are meant to ensure that commercial anticompetitive practices, especially by former monopoly providers, do not thwart access by international competitors to newly opened telecommunications markets.

43. Reuters Financial Service, "Consumers Urge WTO Work for Competition Rules," October 21, 1996.

44. ACTPN Report on Competition Policy, September 6, 1996, at 3.

45. The Business Round Table has also advised the U.S. Government to defer consideration of competition issues in the WTO. See Inside U.S. Trade, October 11, 1996, at 19.

The regulatory principles adopted by the working group are rather basic. Countries pledge to maintain "appropriate measures" to prevent major suppliers from engaging in or continuing anticompetitive practices. The Draft Agreement does not address what competition measures may be "appropriate," and contains only limited examples of anticompetitive practices affecting the telecommunications industry. The proposed commitments also include provisions for interconnection on nondiscriminatory terms, transparent procedures for licensing and other government approvals, and a regulatory body independent from industry participants.⁴⁶

The nature of these commitments and the associated mechanisms for ensuring against anticompetitive practices are still subject to negotiation. Moreover, the negotiators are faced with the additional problem of drafting a market opening agreement that will apply on a most-favored-nation basis and will not confer benefits on non-signatories who do not accept the commitments. In this environment, the U.S. Federal Communications Commission is attempting to draft safeguard language that would prevent non-signatory entrants from using their protected home markets to subsidize U.S. services.

It appears that the negotiators are prepared to leave many aspects of the commitments envisioned to later resolution. Since any agreement that is ultimately reached will become an Annex to the GATS, whatever commitments are adopted will be subject to basic dispute settlement procedures. As a result, signatories would be able to request dispute resolution on issues of compliance, such as whether a country has "appropriate measures" to prevent anticompetitive practices. Panels would then have to decide whether the competition measures maintained by a signatory are appropriate, using whatever terms of reference could be agreed on by the parties.

f. Developments with respect to the proposed Multilateral Steel Accord

In the Tenth Revision of the proposed Multilateral Steel Agreement ("MSA"), which has been considered over the last eight years by a number of steel producing countries, there is a clear recognition of the connection between anticompetitive practices and potential nullification of the market access objectives of the steel agreement. Thus, the preamble states as one of the objectives:

Seeking to achieve maximum freedom of world trade in steel products by eliminating and preventing practices that distort international trade or competition, including tariffs and other market access measures, and to provide fair, equal, and open competitive opportunities for steel products.

This objective is reflected in Article 4.3 of the Tenth Revision which provides that parties recognize that "anticompetitive practices by steel producers, distributors, suppliers, and trading companies, can have the effect of closing markets and/or distorting trade in steel products" Where such practices are believed to exist, any party to the MSA would be entitled to request consultations with the other party.

The MSA does not now, however, have any affirmative commitment to either adopt appropriate competition laws to deal with private anticompetitive practices or for dispute settlement in the case of a dispute between parties concerning the existence of such practices. These shortcomings in the MSA Tenth Revision should not, of course, mask the importance of the acknowledgement that private practices could amount to a trade barrier comparable in effect to tariffs or numerous non-tariff measures. Noting

46. See Inside U.S. Trade, April 26, 1996, at 9-11.

that private anticompetitive practices can have these effects, there have since been efforts to craft a more aggressive approach.

In the spring of 1996, the Specialty Steel Industry of North America ("SSINA") and Eurofer, the European steel association, adopted a Joint Proposal for consideration by their governments for a multilateral specialty steel agreement ("MSSA") which would be pursued if negotiations concerning the MSA failed to make progress. Paragraph II.3 of the SSINA/Eurofer Joint Proposal states:

Due to the trade distorting impact of anti-competitive practices, an MSSA requires a provision that prohibits such conduct. This provision must be applied in the context of and in accordance with existing national competition laws. Cooperation between the Parties of an MSSA on the application of their competition laws should be fostered. The bilateral agreement between the Government of the United States and the European Commission of 23 September 1991 is a good example of such cooperation.

This Proposal would defer to national competition laws and -- for that reason -- would preserve both sovereignty in this area as well as prosecutorial discretion.

4. A modest proposal

If the MSA or MSSA negotiations proceed, it would seem that enlargement of Article 4.3, which deals with private anticompetitive practices, would be in order. Such a sectoral approach could be more achievable than a broad-based WTO commitment, particularly if it is incorporated into an MSA/MSSA that is committed to "maximum freedom of world trade in steel products" and providing "open competitive opportunities for steel products." The enlargement of the Article 4.3 obligations could, in fact, be seen as essential to ensure that the ban on subsidies and numerous governmental trade barriers are not circumvented by private anticompetitive practices.

While there is likely to be debate over the definition of private anticompetitive practices, consideration could be given to the Brittan-Van Miert suggestion that "common principles or rules can be developed progressively and step by step" with an initial focus on "price or output fixing or market sharing cartels, bid rigging, group boycotts, export cartels . . ." ⁴⁷ It would appear that there have been sufficient studies and analyses to permit the MSA/MSSA negotiators to agree on a list of "core principles" that would be essential to implement the SSINA/Eurofer proposal to include in any agreement "a provision that prohibits its [anticompetitive] conduct."

Obviously, there are numerous other areas in which the existing obligations of Article 4.3 could be enlarged, but which are beyond the competence of this paper. What should be clear, however, is the need for consideration in a sectoral agreement such as proposed by the MSA for mechanisms to ensure against nullification and impairment of the agreement's objectives by private practices.

47. Brittan-Van Miert at 11.

TOWARDS AN INTERNATIONAL FRAMEWORK OF COMPETITION RULES

BY

**SIR LEON BRITTAN AND MR. KAREL VAN MIERT
COMMISSIONERS, EUROPEAN COMMISSION**

This Communication is about the international aspects of competition law. It examines whether public international law, and especially the WTO, should be complemented by a specific framework to support competition law enforcement⁴⁸.

The concepts and proposals set out in this paper build on the report of the group of experts established by Commissioner van Miert in June 1994. That report, entitled "Competition Policy in the New Trade Order: Strengthening International Cooperation and Rules", was published in July 1995.

The experts' report covered both bilateral and multilateral cooperation in the field of competition. Their parallel development was considered to be complementary and mutually supportive. Thus, although the emphasis of this Communication is on multilateral aspects, the further development of bilateral cooperation agreements is equally important and would have a favourable impact on work in a multilateral setting.

I. INTRODUCTION

a. A global perspective on competition rules: Why international rules are needed

Two developments have characterised international economic activity in recent decades: liberalisation and globalisation. Eight negotiating Rounds since GATT was established in 1947 have brought import tariffs down to historically low levels: from around 35 per cent to below 4 per cent⁴⁹. This has led to a massive growth in the volume of trade in goods and services, doubling every seven to eight years and growing from around \$200 billion in the early sixties to exceed \$5000 billion in 1994. Foreign

48. The scope of this Communication is limited to anticompetitive practices of enterprises. There are many governmental practices that have an effect on competition, such as subsidies, which are grouped together with private practices in the EC Treaty's chapter on competition rules. These are by and large already covered by rules under the World Trade Organisation (WTO).

49. This is the trade-weighted average of industrial tariffs that will apply in developed countries once the reduction commitments of the Uruguay Round have been fully implemented. 40% of European imports will even be duty free. Developing countries generally committed themselves in the Round to bind their duties in a horizontal way for the first time, with highest levels mostly around 20-35 per cent. Remaining quantitative restraints on imports, in specific sectors such as agriculture or textiles, but also with regard to generic practices such as voluntary export restraints, are to be phased out by all WTO Members.

direct investment has grown at an even more spectacular rate - by a factor of thirty in less than 25 years. National economies are more open to foreign competition today than ever before.

At the microeconomic level firms have adopted global strategies. Liberalisation and technological progress have driven them to adopt new production methods: exploiting the comparative advantage of countries, improving their mobility, shifting factors of production, moving into new markets etc. Firms often need to be present on different markets at the same time to stay competitive. As a result countries have become interdependent and the markets of many goods and services have become regional or even global.

The number and size of transnational firms has increased. There are more commercial practices that have an international dimension than ever before. These can lead to an increase in cross-border anti-competitive practices: cartels with international effects, agreements whose effect is to exclude (foreign) competitors in an unfair way, international abuses of a dominant position, or international mergers with anticompetitive effects. Such practices can limit competition and undermine the benefits of liberalisation.

These developments call into question the domestic nature of competition rules and the absence of binding rules at the international level. Many countries or regions have implemented comprehensive competition policies, but lack appropriate instruments to apply domestic competition rules to anti-competitive practices with an international dimension, as well as to obtain relevant information outside their jurisdiction. A framework is then necessary to enhance the effective enforcement of competition rules.

In the Community anticompetitive practices are effectively dealt with in an even-handed and non-discriminatory way across Member States. Competition policy is a cornerstone of the Community legal order. But there are no competition rules at the global level, and in many foreign markets the means for redress against anticompetitive practices that undermine the efforts of our companies trying to compete are inadequate.

There are then four main reasons why the adoption of international rules on competition should be considered:

1. As part of the Community's strategy on market access: anticompetitive practices are keeping our firms out of third country markets but they cannot, in the absence of proper enforcement measures in those third markets, be tackled effectively without international rules. European firms also face a competitive disadvantage if they have to compete on world markets with foreign producers operating from home markets that are subject to less vigorous competition policies. Multilateral rules would promote more equal conditions of competition world-wide.
2. To avoid conflicts of law and jurisdiction between countries and to promote a gradual convergence of competition laws. There is a real need to minimise the jurisdictional conflicts and resulting trade conflicts that can arise, not only from extraterritorial application of certain competition laws, but also from the application of competition law to anti-competitive practices conceived abroad but implemented within one's jurisdiction. Convergence and conflict avoidance would also increase the legal security of firms operating in different jurisdictions, as well as reduce their costs of compliance with competition laws.
3. To increase the effectiveness and coherence of the Community's own competition policy enforcement. As it is in many countries, competition policy is a key factor in supporting the competitiveness of European industry, in protecting a sound functioning of our market

economies and in maximising consumer welfare. It needs instruments of cooperation to take account of the effects of globalisation.

4. Enhanced commitment to competition policy enforcement would strengthen the trading system along the lines of our legal systems and market economies, of which competition law is a basic feature.

These concepts are further developed below.

b. The competition perspective

Within the Community the elimination of trade barriers and the application of competition law have gone hand in hand. This approach is unique in the world. The competition policy of the Community has, in its development over 35 years, grown to full maturity and is rigorous and neutral in its application.⁵⁰ Consequently, the Community has become a highly integrated market, with the competition provisions of the Treaty protecting the integrity of the common market. In a larger perspective, however, the Community's competition policy and instruments have remained essentially domestic, inward-looking and limited to conduct implemented within the common market and affecting trade between our Member States.

Absence of an instrument to deal with transborder cases

Many countries or regions which have implemented comprehensive competition policies nonetheless lack the necessary instruments to apply domestic competition rules to anti-competitive practices with an international dimension. For example, information central to the investigation may be located outside their jurisdiction and thus be beyond their reach. Absent the necessary proof of anti-competitive conduct, competition authorities are unable to take remedial action.

Avoidance of conflict of law and remedies

The 1980s and 1990s have seen a significant increase in international mergers, strategic alliances, joint ventures, licensing agreements etc. These arrangements may face examination by different authorities at the same time with a potential for a conflict in the law or remedy applied to the same case. In an extreme example, divergences in the laws applicable to the same set of facts may result in conflicting conclusions as to the legality of the behaviour under review. However, even where there is a common view as to the anti-competitive nature of the conduct, the remedies imposed in each jurisdiction may be incompatible.

Greater convergence of laws and cooperation between competition authorities would reduce the likelihood of such conflicts and promote greater legal certainty for business.

50. In parallel, those member States who did not have competition authorities prior to the establishment of the Community, have enacted legislation and set up enforcement structures at national level.

Avoiding unnecessary duplication of work and costs

The review of commercial practices involves considerable work and costs, both for competition authorities and for the businesses whose conduct is subject to review. If the same commercial practice falls within several jurisdictions the costs increase accordingly. Greater cooperation and the elimination of unnecessary duplication of effort, can reduce costs to competition authorities and business alike.

Export cartels

Certain practices are difficult to tackle under present rules by any agency. For example, export cartels⁵¹ have, for trade reasons (the wish of countries to improve their terms of trade) not been subject to competition law in exporting countries. For legal and practical reasons too, competition law has not been applied. Absent an effect on the exporting country's markets, the competition authority has no jurisdiction over export cartels. For the importing country, export cartels have an effect on the market and so jurisdiction can be established, but the evidence needed to prove the existence of the cartels is located outside the importing country's jurisdiction.

In all these cases the instruments at the disposal of the Community and its Member States are inadequate.

More generally, in today's liberalised world the Community cannot be without an *external* dimension to its competition policy. The Community interest is to seek the same commitment to competition enforcement from our partners in their markets as we apply to operators, irrespective of their origin, on ours.

c. *The trade perspective*

Balance of access opportunities

Anticompetitive practices affect the balance of access opportunities negotiated between WTO Members. They belong to the next barriers to trade in a liberalised world. The application of competition law contributes to creating accessible markets and to assuring the overall openness and stability of the trading system. Community efforts in this area need to be matched by our partners. Competition policy is now clearly trade-related, and the application of competition law principles on export markets will help level the playing field and promote equal conditions of competition for our firms competing on international markets.

While governments today are subject to very strict international disciplines in respect of the laws they make or the measures they apply, as soon as these have an effect on trade, no rules exist at the international level to control anti-competitive commercial practices. Such practices can replace formal governmental barriers that have been reduced or eliminated. Arguably, the incentive for firms to engage in anticompetitive behaviour impeding market access, (such as cartels combined with boycotts, exclusionary abuse of a dominant position, exclusionary vertical restraints) increases with the reduction of tariffs and

51. Export cartels are a specific problem insofar as their negative effects are only felt in the market of the importing country, while the relevant information is situated in the exporting country. The latter of course has neither an interest, nor the jurisdiction to take action.

other barriers. Also, as industrial structures in emerging economies increase in sophistication, so will the devices used by firms to protect the market from foreign competition. Finally, governments whose freedom of action to support domestic industries through administrative measures has been curtailed by international rules, may be tempted to maintain lax standards of competition regulation or enforcement, or to grant exceptions, to protect specific industrial sectors.

Although competition rules do exist on many of our export markets, anticompetitive practices are often impossible to tackle without active enforcement by the domestic competition authority. In the absence of international rules our firms have to rely exclusively on the commitment and tenacity of third country agencies to have their concerns addressed⁵².

Recent developments confirm that real or perceived anticompetitive practices can generate trade friction and that the trading system has been unable to effectively resolve disputes in the absence of agreed rules of conduct⁵³.

Trade instruments

The inadequate application of competition principles on different markets can have other trade effects. Cartellization or similar restrictive behaviour in a foreign country can enable firms to make supracompetitive profits at home and then sell products on export markets below cost price. This may trigger the use of legitimate trade instruments such as antidumping duties by the importing country. But the use of trade instruments will not address the activity on the exporting country's market and may also have negative side effects. From an economic perspective it is therefore less efficient than tackling the conduct on the exporting firm's home market.

Even where there is no evidence of dumping, the protection afforded to companies through an inadequate application of competition rules on their home markets may place them in an advantageous position when competing on foreign markets.

d. Jurisdictional issues: avoiding unilateral measures

Some competition authorities pursue policies to address market access problems, caused by anti-competitive practices on foreign markets, by extending the territorial scope of their national competition rules. This raises concerns of jurisdiction⁵⁴ and sovereignty, and can lead to conflicts between countries.

52. Note, however, that in the US the enforcement system is geared towards private action in civil courts : private parties are actively encouraged to bring cases by the possibility of winning treble damages. The competition provisions in the EC Treaty and national legislations can also be invoked by private parties before national courts. Domestic courts in third countries are often not, however, as easily accessible.

53. Note, however, that in May 1995 Kodak filed a petition with the US Government (USTR) under Section 301 of the US Trade Act, alleging that there are anticompetitive barriers restricting open access to the Japanese market for consumer photographic film and paper. On 13 June 1996 Acting USTR Barshefsky made a determination of "unreasonable practices" and initiated dispute settlement in the WTO, on the grounds of "nullification and impairment" of expected GATT benefits and violation of GATS commitments. Consultations will also be conducted under the 1960 GATT Decision on restrictive business practices.

54. See The 1995 US international antitrust enforcement guidelines. US attempts to impose its law beyond its jurisdiction led Canada, France, Germany, the UK, the Netherlands and Switzerland to adopt blocking

Moreover, there are limits to the effectiveness of such a policy given the legal and practical obstacles to seeking information outside one's jurisdiction.

Enhanced international cooperation would limit competition authorities' need to resort to extraterritorial action. There are compelling advantages to solving problems through cooperation, especially if such cooperation improves the likelihood that the anticompetitive behaviour can be eliminated.

e. Historical background and recent developments

There have been many initiatives to establish rules on anticompetitive conduct in the past. The Havana Charter was based on the concept of comprehensive rules covering both public and private practices and devoted a whole chapter to restrictive business practices⁵⁵. The Charter was not ratified however and was succeeded by the more modest GATT, which examined the trade-competition interface a number of times in the 1950s and 1960s, but with no clear result⁵⁶. In the 1970s a full Competition Code was finally negotiated in the framework of UNCTAD⁵⁷ at the request of developing countries. Its provisions are not binding.

The OECD has carried out significant work in the international competition area for many years. It has adopted a Recommendation that includes a non-binding but functioning notification instrument between Agencies, which has been revised a number of times⁵⁸.

The WTO contains limited tailor-made rules on competition in each of its three "pillar" Agreements⁵⁹. The General Agreement on Trade in Goods (GATT) has an annexed Agreement on Trade Related Investment Measures (TRIMs) which provides for a review, to be conducted within five years of its entry into force, to consider whether the Agreement should be complemented with provisions on

legislation. Section 301 of the 1974 Trade Act also allows trade action to be taken to counter the toleration by foreign governments of anticompetitive practices.

55. See its Chapter V. The 1947 Charter foresaw the establishment of an International Trade Organisation to oversee world trade. The Organisation was mandated to act against anticompetitive practices: it would have had an investigative capacity and be entitled to issue recommendations on remedial measures. The Charter, which also included rules on investment, was not adopted and a number of its provisions were bundled together in the less ambitious GATT Treaty that was, in turn, superseded by the WTO on 1 January 1995.

56. See GATT BISD 7S/29, 9S/28,170.

57. The Set of Multilaterally Agreed Equitable Principles and Rules for the Control of Restrictive Business Practices was adopted by the UN General Assembly in December 1980. (UN Doc. A/35/48 (1980)).

58. Amended in 1995. This Recommendation includes a voluntary dispute settlement procedure, which has never been used. (C(95)130/final).

59. The WTO has three "pillar" Agreements, covering trade in goods (GATT), trade in services (GATS) and the trade-related aspects of intellectual property rights (TRIPs). The Agreement establishing the WTO itself as well as the integrated Dispute Settlement Understanding overarch the three separate Agreements. The WTO also includes a number of Plurilateral Agreements, which are binding between the signatories only. The GATT Agreement on trade in goods contains a provision to ensure commercial conduct of enterprises that have been granted special or exclusive rights (Article XVII GATT - which does not function very well). It has been argued that anticompetitive conduct could be tackled through a so-called "non-violation" complaint.

competition policy⁶⁰. The Agreement on the trade-related aspects of intellectual property rights (TRIPs) contains provisions on the control of anti-competitive practices or conditions in contractual licenses, relating to the transfer of technology or of other proprietary information. It also recognises the right of countries to regulate such practices through their domestic laws, and it provides for consultations and exchange of information between governments where there is reason to believe that licensing practices or conditions constitute an abuse and have an adverse effect on competition in the relevant market. Likewise, the General Agreement on Trade in Services (GATS) contains provisions on consultation and exchange of information, similar to those in the TRIPs Agreement, and requires countries to ensure that monopoly services providers do not abuse their position in activities outside the scope of their monopoly privilege.

However, the scope of these provisions remains very limited for the effective control of anticompetitive practices at the international level. More importantly, the lack of more comprehensive multilateral principles and standards for the application and enforcement of competition policies, may undermine past and present international trade liberalisation efforts.

Parallel to the above developments an increasing number of countries have negotiated bilateral agreements on *cooperation* between their competition authorities. Such Agreements have been negotiated in the Union both at the Community and the national level. At Community level, for example, a cooperation agreement has been concluded with the US. Amongst others it provides for notification of enforcement activities by one party that may effect the important interests of the other; information exchange in certain circumstances; consultation and cooperation and avoidance of conflicts over enforcement activities. The so-called positive comity instrument stands out⁶¹, because it permits a party whose important interests are affected by anticompetitive practices within the other party's territory to ask the latter to examine them and take appropriate measures. In general, the substance of these treaties has also evolved and their contents are more developed today than before.

Notwithstanding the wide consensus on the promotion of deeper bilateral cooperation among competition authorities, bilateral cooperation agreements, similar to OECD efforts, remain limited in scope and in effect. In scope, because although increasing, only the EU and a limited number of countries which are very actively involved in enforcing competition policies, have entered such agreements; and, in effect, because these agreements do not contain substantive rules or principles.

Another question is whether, next to the above, the proliferation of sector-specific trade agreements that include competition provisions which each have their own specific characteristics, can be kept coherent. This becomes more significant as the interrelationship between trade in goods, services and foreign investment increases, and as respective geographic markets overlap. At best, firms will press governments to ensure that their policies are streamlined and consistent. At worst, they will seek to exploit the provisions of such agreements for narrow corporate advantage through forum-shopping.

A more coordinated policy grouping together a number of countries and straddling all sectors of the economy then needs to be considered.

60. Multilateral rules on investment are currently being negotiated in the OECD and the WTO may start work in this field soon. Competition rules may contribute to ensuring that (foreign) investments are only made under sound and competitive conditions.

61. See Article V.

II. WHICH FORUM ?

There are four alternative fora to house an international framework: the OECD, UNCTAD, the negotiation of a separate, stand-alone agreement, or the WTO.

The OECD has been involved in the area of international competition rules for a long time and is serviced by an independent Secretariat. It has the organisational capacity to cater for the negotiation of an agreement on international competition rules. However the OECD has three disadvantages: it does not have a track record of dealing with binding commitments and dispute settlement, it does not provide the disciplines on competition-related trade measures (which are dealt with in the WTO), and, importantly, it has a limited Membership.

UNCTAD developed a full Competition Code in the 1970s which has been regularly revised. However, many of the same objections that apply to the OECD also apply to UNCTAD, *i.a.* the absence of a tradition of dealing with binding commitments and the lack of an overlap with competition-related trade disciplines (which are dealt with in WTO).

It may be difficult to gather the necessary political momentum in different countries for an independent, stand-alone agreement, and its functioning would likely have higher overhead costs.

The WTO is the prime candidate for a framework of competition rules: it has a near universal membership⁶². The WTO can provide a balanced response sensitive to the varying interests and concerns of both developed and developing countries.

The WTO is the recognised institution for trade related international economic rules. Many of its present rules are closely related to competition issues (especially those on subsidies, state enterprises and intellectual property). Some of its Agreements already have a number of specific provisions to address anticompetitive practices (see under I.e above).

The institutional infrastructure of the WTO includes a system of transparency and surveillance through notification requirements and monitoring provisions. These are common to many WTO/GATT Agreements. The WTO also provides a forum for continuous negotiation and consultation, where its Members could bring their trade-related competition concerns. Furthermore, the Organisation has a reinforced and legalised dispute settlement system between governments. This can back-up agreed rules and provide means for conflict resolution.

The WTO also caters for the possibility of negotiating an Agreement with specific disciplines between a limited number of signatories (thereby creating a so-called Plurilateral Agreement under Annex IV of the WTO Agreement).

III. AN INTERNATIONAL FRAMEWORK OF RULES ON COMPETITION - ISSUES FOR CONSIDERATION

A premise of this Communication is that the creation of an International Competition Authority, with its own powers of investigation and enforcement, is not a feasible option for the medium term. Countries would at this stage be unwilling to accept the constraints on national sovereignty and policies

62. Over 25 former state trading economy countries, amongst which China and Russia, are currently negotiating their accession to the WTO.

that such a structure would impose. The proposals set out below and in the annex therefore reflect a more modest approach, built on commitments binding governments and providing *intergovernmental* procedures. This is also the model on which the international trading system has been built since the Second World War.

Work on a framework of international competition rules is most likely to make headway if a progressive approach is adopted. The objective would be to strengthen competition policy coordination in steps (building-blocks approach). This could be achieved through the creation of a working group in WTO, whereby initial work might be limited to those areas where consensus can be mustered at an early stage, and more ambitious objectives would be tackled later. The main steps can be identified as follows:

a. *Adoption of domestic competition structures*

A first step could be taken by WTO Members committing themselves individually to assuring the existence of domestic competition structures. The core elements of such a structure would be :

- having basic competition rules in domestic laws to address anti-competitive practices, covering restrictive agreements of companies, abuse of dominant position, and mergers;
- having or creating domestic enforcement structures to guarantee an effective implementation of those rules, including proper investigatory instruments and appropriate sanctions;
- ensuring access for private parties to the domestic enforcement authorities, including national courts, on equitable, transparent and non-discriminatory terms.

b. *Adoption of common rules*

In parallel WTO Members could seek to identify a core of common principles, and work towards their adoption at international level. This would :

- promote equal conditions of competition world-wide;
- facilitate closer cooperation between competition authorities and pave the way for the coordination of international enforcement activity;
- promote a gradual convergence of competition laws.

Common principles or rules can be developed progressively and step by step. It may be opportune, in a first stage, to concentrate on horizontal restraints (price or output fixing or market sharing cartels, bid-rigging, group boycotts, export cartels). Work on other practices (abuse of a dominant position, certain vertical restraints such as exclusive distribution or supply agreements) could start in parallel, but may take more time.

c. *Establishment of an instrument of cooperation between competition authorities*

Transparency is an essential element of a framework of competition. Provisions could be developed on notification, information exchange and cooperation between competition authorities. These could include provisions regarding cooperation procedures, for example when agencies are launching

parallel investigations into the same practice. Negative and positive comity instruments could also be developed further⁶³.

d. Dispute settlement

Apart from its natural role as a permanent forum for negotiation adapting or strengthening agreed rules and obligations, the WTO also provides a compliance mechanism to help settle disputes between governments when a country claims that agreed WTO rules have been breached. Private parties do not have access to the WTO's dispute settlement system. The WTO mechanisms could be applied if a country for example fails to set up a domestic competition structure or if it fails to react in a specific case to a request for enforcement action lodged by another WTO Member. The relevant rules could be adapted, if necessary, to the specificities of competition law and policy, and could be applied in a progressive way.

The above concepts are further developed in the annex.

IV. RELATED ISSUES

a. Who should participate?

An international agreement on competition rules would bring benefits to all nations of the trading community. All countries could participate in an agreement to incorporate competition law provisions in their domestic laws.

At the same time the application of the *cooperation and enforcement* provisions would require, of participating countries, that they have a sophisticated administration capable of handling sensitive information and of assessing commercial practices in a dynamic context. Many developing countries do not yet have this administrative machinery.

It is therefore realistic to expect that, if adopted, cooperation provisions of a competition agreement would, in a first stage, apply only between a limited number of signatories with mature antitrust agencies. Provisions could group together developed and advanced developing countries to start with, and gradually come to include more countries. Any country able to shoulder the obligations of the agreement could be eligible to participate.

A different intensity of cooperation, for example in the field of information exchange, could apply between different countries.

63. These could be inspired by OECD provisions as well as those in bilateral agreements. The principle of negative comity implies that a Party will take into account the important interests of another Party before action is taken. Through the positive comity instrument (see also above), a Party may request another to act on the basis of its own powers, to investigate activities which adversely affect the important interests of the first Party.

b. *The interest of developing countries*

Private anticompetitive practices have long been a concern for developing countries. As the turnover of many multinationals has come to surpass the GDP of middle size developing countries, developing countries have seen a growing need for a minimum of discipline on private conduct in their markets. It was in response to this that UNCTAD developed its competition Code in 1980. It would certainly be consistent with this stance for developing countries to support a further strengthening of international rules, certainly if these would come to cover practices, such as export cartels, that today escape effective control⁶⁴.

Even if developing countries might not, in a first stage, participate in the provisions on cooperation between competition authorities (see under III a. above), they would be beneficiaries of enhanced control over anticompetitive practices with an international dimension. They would also, like other WTO Members, have access to the dispute settlement provisions if agreed basic rules and enforcement structures had not been properly implemented by other countries. Moreover, they would benefit from the acceptance by developed or newly industrialised countries of MFN obligations in the competition field, even if their own obligations were lighter (eg. in respect of transitional periods). Finally, all WTO Members, including developing countries, would benefit from possible dispute settlement judgements which might create new market access opportunities.

Insofar as competition rules can ensure that investments are made under sound and fair conditions, effective competition structures can support liberal investment regimes.

The establishment of appropriate competition structures is a complex task and requires substantial resources and training. A framework on competition should include provisions on technical assistance for those countries requesting it.

c. *The relation to trade defence instruments*

The relation between the elaboration of a competition framework and the functioning of existing trade instruments is a key issue in the trade-competition debate. It is true that the incorporation of competition provisions into trade law and/or more comprehensive and effective enforcement of competition policies through increased international cooperation, would lessen the need to have recourse to instruments of commercial defence. However, competition instruments cannot be seen as substitutes for trade instruments. The latter only lose their *raison d'être* in the context of fully integrated markets. A framework of competition rules would, therefore, complement present trade law and create a *new* instrument to tackle anticompetitive behaviour in markets which are not integrated. Thus the development of new instruments would complement, not supplant, present instruments.

The above is illustrated by practice within the EC itself. Antidumping action is excluded on intra-Community trade, as this is a fully integrated market⁶⁵. This integration has meant, for Member

64. Note, however, that a competition framework cannot be a panacea for the difficulties faced by developing countries as a result of their limited domestic instruments and capacities of investigation. This reinforces the need for developing countries to be able to benefit from technical assistance.

65. The EEA Agreement between the EC and EFTA countries follows the same approach: anti-dumping is excluded in those areas where the "acquis communautaire" has been taken over. In trade between the Community and the countries of central and eastern Europe, however, anti-dumping action can still be

States: the elimination of all tariffs, the elimination of measures of equivalent effect to tariffs (which is a wider concept than GATT's national treatment obligation) and the adoption of the four freedoms (goods, - services -- including establishment, capital -- including investment, and labour). The single market programme and relative currency stability have been added to this. Competition law has been applied effectively, amongst others with an explicit objective to integrate the markets of Member States, by an authority with autonomous powers of investigation and enforcement. All of these elements are absent in present day world trade. Finally the framework explored under II. above falls well short of EC competition structures, and would have to prove its worth.

d. The relation to the Community legal order and Member States

A basic assumption of this Communication is that a framework of competition rules, negotiated in WTO, would be compatible with EC competition law, in particular the provisions of the EC Treaty. The WTO instrument would, as is traditional in GATT/WTO, apply to governments and not be self-executing or have direct effect. It would also be much more general than the relevant provisions under EC law, and the emphasis would in the first stages be on procedural obligations. For these reasons alone it is highly unlikely that there should be any friction between a WTO panel report on the rules agreed in the WTO, and ECJ case law on Articles 85 and 86 and related legislation⁶⁶.

Moreover firms are already, including within the Community, subject to different competition regimes, and an objective of an international framework is exactly to promote equivalent and rational application of competition principles on different markets.

A second issue concerns the question of participation in an international framework. As competition is not an exclusive Community competence, international cases might involve either the Community (if trade between Member States were affected) or a single Member State (if it alone were affected). A framework of rules would have to take account of both cases, while preserving the unity of Community action in the trade field.

V. CONCLUSIONS

The Commission requests the Council to take note of this Communication.

Noting that by pursuing stronger multilateral efforts the benefits of greater convergence and improved competition standards and enforcement would be realized world-wide;

Considering that an international framework of competition rules can promote a level playing field and could therefore reduce the costs, distortions and conflicts in international trade arising from differing domestic competition regimes;

taken, as well as between the US, Canada and Mexico in the NAFTA context. The same applies between the EU and Turkey: anti-dumping action remains a possibility despite the customs union agreement.

66. A case where a WTO instrument and a corresponding EC regulation are even closer than in the competition field is anti-dumping. In this case the latter is even an implementation of the former, yet friction between panel reports based on the WTO instrument, and ECJ judgements based on the EC regulation, has so far been avoided.

Recognising that, alongside continued bilateral cooperation with principal partners stronger multilateral cooperation in the field of competition is desirable and feasible at this time, and would contribute significantly to a more efficient, stable, and integrated global economy, from which both the Community and its Member States, as well as all WTO Members, would benefit;

Recognising that the possible development of an international framework of competition rules is in the interest of all trading nations, irrespective of their level of development;

Considering that the Community has a sound experience in applying uniform competition principles across different countries.

The Commission suggests the Council to conclude along the following lines:

- The Community should prepare a position for the WTO Ministerial meeting in Singapore in December 1996; this should propose to WTO Members that the Organisation establish a Working Party to conduct exploratory work, from 1997 onwards, on the development of an international framework of competition rules;
- Such a framework could include, in particular: a commitment by all countries to adopt domestic competition rules and enforcement structures and, for a limited number of countries, an instrument to allow information to be exchanged between competition authorities, an instrument to request action on foreign markets, and an intergovernmental dispute settlement mechanism;
- That the European business community should be consulted and appropriately associated as progress in this area is made;
- That the Community should take the lead on this issue and initiate efforts to build international consensus and encourage other WTO Members to support multilateral work in this field;
- To request the OECD and UNCTAD to pursue their work on trade and competition taking account of developments in WTO.

ANNEX

This annex outlines the main concepts set out under Part III of the Communication. Many of the concepts have been extracted from OECD documents and other sources, and are included on an exploratory basis:

a. Adoption of domestic competition structures

The process towards an international framework of competition rules could be carried out in a progressive way. A first step could be to ensure that each country provides for competition rules in its national legislation, covering restrictive agreements, abuse of dominant position and mergers. This would include the provision of a set of equitable procedures ensuring an effective application of the rules, including investigatory instruments and appropriate penalties, as well as access to the judicial system, transparency and non-discrimination.

Although an increasing number of countries have a sophisticated competition law for the effective control of restrictive business practices, some (developing) countries have yet to introduce such rules. An added advantage of agreement by all countries to enact competition laws is that domestic courts would become an integral part of enforcement procedures, as they are in most industrialised countries already⁶⁷. Firms could not then be obliged to respect agreements which were forbidden: these would be unenforceable before national courts.

Another important issue is sectoral comprehensiveness. A recent OECD study has revealed that even in OECD countries substantial gaps exist in the coverage of competition laws; most countries exclude sectors of the economy from their competition law application⁶⁸. A first step in addressing this could be taken by a listing of these sectors and a commitment to stand-still and gradual reduction by all countries⁶⁹.

Competition rules should likewise apply to all economic operators. Public enterprises and companies with special or exclusive rights should be covered, except for that part of their activities where their public task overrides the interests of competition law application.

b. Agreement on common rules

There is general recognition of the negative effects on competition of *horizontal* restrictive practices: cartels, market sharing, boycott of foreign firms, price fixing, bid rigging, collective exclusive dealing. It should be possible to formulate international provisions at an early stage to combat these practices. Relevant provisions should also cover export cartels. These are exempted from the applicability of

67. A similar approach was adopted in the Uruguay Round negotiations on the respect of intellectual property rights (TRIPs).

68. Overview on Coverage of Competition Laws and Policies by Prof. B. Hawk.

69. See OECD work in this respect.

competition law in exporting countries. Although such cartels are covered by the legislation of most importing countries⁷⁰, they are hard to tackle due to a lack of information in the importing country. An international agreement to outlaw export cartels would put an end to these "beggar thy neighbour" policies.

Vertical restrictions, such as exclusive distribution or supply agreements, should also be considered, but a longer period may be required to reach consensus, and countries may wish to maintain a greater degree of latitude in their assessment of the effects on competition of vertical restraints⁷¹.

A common approach to vertical restrictions could be found by concentrating on restrictions which create barriers to market access. The working group could examine to what extent competition authorities could take into account the international dimension and weigh the effects on domestic competition of market access restrictions, when a complaint is lodged through the provisions of the international framework (see later).

Such a review by a competition authority would reflect the fact that no adequate assessment of competition cases can be made without careful examination of the international context: competition policies cannot be identical in different countries, and that each market needs to be assessed in its own context, in consideration of the economic conditions and structures influencing the openness, and thus the competitive situation, of that market. In their review of practices, competition authorities would, as many already do, give weight to factors such as: the effect of trade barriers (tariffs and non-tariff barriers), regulatory barriers (i.e. divergent standards, restrictions on distribution or supporting services), foreign investment barriers, the import and foreign investment ratio, and the corporate groupings structure. Competition authorities would continue to base their decisions on the efficiency goals that are fundamental to competition policy. But the principle, that the international dimension needs to be taken into account in international cases, would be incorporated into common rules with respect to all anti-competitive practices⁷²: As a market would be assessed to be more closed, greater weight would be given to the importance of foreign competition to balance entry barriers.

This approach might also be useful in working towards agreement on *abuse* of dominant position. It is generally agreed that exclusionary practices; hindering of access to essential facilities; practices with possible foreclosure effects such as fidelity rebates or tying arrangements; and production limitation can all amount to abuse of dominant position. As European competition policy enforcement has shown, these practices are capable of affecting trade and creating access barriers. Other practices would require further consideration: excessive pricing, predatory pricing, some vertical arrangements.

70. E.g. Wood Pulp - judgement of the European Court of Justice of 27 September 1988, 1988 ECR 5193.

71. Partly due to differences in underlying objectives and principles the Community and some trading partners have different approaches: the Community is relatively strict on vertical restrictions that interfere with market integration -- export bans and some territorial restrictions; the US take a more tolerant view. An exception is resale price maintenance which is prohibited in most jurisdictions.

72. This approach is similar to the one taken in the Havana Charter (Article 46), where an absence of government action to prevent a limitation of access to markets could constitute a violation of its provisions. The jurisprudence of the European Court of Justice follows similar lines, i.e. that a practice should be assessed in its economic and legal context, and to the weight traditionally given to the objective of ensuring market access, although only between Member States. E.g. Henninger (Delimitis) - judgement of the ECJ of 28 February 1991.

There has been a great increase in the number of international *mergers*. It would be premature to suggest international substantive rules in this area. At the same time firms are today having to notify the same merger to several different competition authorities. Procedural harmonisation would avoid unnecessary duplication of efforts of firms and agencies and, in encouraging cooperation, would limit the potential for contradictory decisions⁷³. A first step could be taken by harmonising notification filing forms and deadlines⁷⁴.

c. Establishment of instruments of cooperation between competition authorities

Meaningful information exchange is a key element of cooperation between competition authorities. At the same time business information is subject to strict legal protection in all jurisdictions and it is difficult to imagine confidential documents being exchanged between competition authorities as a routine matter⁷⁵.

Information exchange would have to be developed cautiously. In a general sense the will of agencies to cooperate will certainly be the greatest when they are investigating a same case and intend to apply similar enforcement criteria. Exchange becomes more difficult when different solutions are being envisaged. At the extreme there may be a situation where one agency seeks clear enforcement measures while a counterpart has no intention of taking action. Although the last example is the most difficult, it is then that the need for exact information may be the most acute.

An important first step towards the development of rules on information exchange could be to catalogue the types of information that are considered confidential in different countries, and what forms of legal protection apply.

An international framework could, in the beginning, provide for the exchange of non-confidential business information between a group of core participating countries. A further step might be taken, if this mechanism is felt to function well, by considering whether certain authorities are ready to exchange information of a more detailed nature bilaterally on the basis of consent. Clearly, such an exchange of confidential information would have to be made subject to a set of criteria and guarantees. It is conceivable that agencies would wish to make exchange subject to the fulfilment of certain conditions (e.g. guarantees on confidentiality or limits to the use of the supplied information): in particular the receiving authority would have to commit to refrain from taking extraterritorial action on the basis of that information. In any case, full exchange obligations are likely to be a longer term objective.

73. The 1990 Merger Regulation has extrajurisdictional effects: it includes competence for the Commission to examine mergers of firms headquartered outside the EC, if they have a turnover of 5 billion Ecu or more and where two of the undertakings concerned have a turnover within the EC of at least 250 million Ecu. As more Agencies scrutinise mergers it is possible that one Agency may forbid it, while another imposes conditions such as divestiture of certain parts or alternatively may see no objection at all.

74. The OECD 1993 Whish/Wood "Merger Process Convergence Report" has made a number of proposals to harmonise international procedures in the field of merger notifications.

75. It should be recalled that extensive international information exchange possibilities do exist in certain sectors, for example between authorities controlling securities trade. And different levels of information exchange have already been agreed in the competition field: the EEA Agreement for example provides for a sharing of information between the Commission and the EFTA Surveillance Authority. Although the EC/US Cupertino Agreement does not provide for the exchange of confidential information, US Congress in 1994 did pass new legislation to enable the antitrust agencies to pursue reciprocal arrangements for the purpose of exchanging confidential information, even in cases where sanctions that may be taken are different to those under US law.

Clearly the European business community should be consulted and closely associated as options and conditions regarding the exchange of confidential information are explored.

In antidumping investigations officials actually have extra jurisdictional information *gathering* possibilities - they are usually given direct access to the files of the firms they investigate in third countries. A similar element could be considered in competition cooperation by enabling officials to assist their colleagues in third countries when investigations are being pursued. The cooperation procedures that apply in internal Community cases between DGIV and Member State authorities is one example of such procedures.

Another key element of cooperation between authorities is the positive comity instrument, which has already been included in recent bilateral competition agreements⁷⁶. Options need to be explored to further develop this concept and to incorporate provisions that will generate enforcement by third country agencies, while respecting each others' autonomy. In particular it could be considered whether and under which conditions competition authorities could, within reasonable limits, be obliged to investigate on behalf of one another, and to have to indicate to a requesting counterpart within an agreed time-limit whether enforcement action is envisaged⁷⁷. A decision not to act would have to be reasoned and supported by relevant factual material.

d. Dispute settlement

The gains of international cooperation have been set out earlier. It is clear, however, that the advantages would be the greatest if countries can be committed to abide by agreed rules. That would generate a commitment to enforcement. A framework should therefore have a binding character.

A central question concerning the development of a dispute settlement system, which would apply between governments, relates to the standard of review that an international panel could apply. At a first stage, review by a panel might concentrate on procedural aspects: whether a country has enacted a domestic competition structure as agreed; if a country is subject to information exchange obligations, whether these have been complied with; and, if a country has commitments in this area, whether the transparency motivation and timetable requirements of the positive comity instrument have been met in a specific case. The dispute settlement system could be extended to include review of whether the statement of the reasons for the national decision was adequate, whether the facts have been accurately stated, whether there has been any "manifest error of appraisal" of the facts or whether there has been a "misuse of powers".

An important issue would be the deadlines applied to resolution of international disputes. This is because firms confronted by anticompetitive practices in many cases have the option of asking for application of a protective trade measure. These can be activated at short notice. Clearly a framework to tackle anti competitive practices through *competition instruments* will have to function with short deadlines if it is to offer a credible alternative.

76. See also previous footnote.

77. This has implications for the allocation of resources of antitrust agencies. It may be necessary, in a first stage, to put a maximum on the amount of complaints one agency could lodge to another within a framework per year, or to have a threshold (e.g. turnover in the product concerned) below which the mechanism would not apply.

Another key issue relates to remedies when a country is condemned by an independent panel. Countries could be authorised, in the absence of corrective action by a foreign agency and under specified conditions, to take extra jurisdictional action through use of their own domestic competition laws. In cases where this is not viable, (for example if there are no subsidiaries of the targeted firm or firms in one's jurisdiction), measures usually foreseen in the trade context, such as the withdrawal of tariff concessions⁷⁸, are likely to be more acceptable than competition sanctions, e.g. international fines, as a next step⁷⁹.

Insofar as an agreement on competition might include binding elements, it is possible that a derogation clause of some kind may be considered necessary. This would cater for cases where the essential interest of a party is felt to outweigh the enforcement interest of a trading partner requesting action, for example if the latter has invoked the positive comity instrument. Such an exceptional situation could arise if an authority allows restructuring agreements with restrictive effects. Such issues have been resolved in trade law cases by allowing GATT/WTO Members, in exceptional cases, to derogate temporarily from their obligations and take safeguard action to protect their domestic industries. A similar approach in competition cases, provided measures taken are time-limited, justified, non-discriminatory and transparent, might need to be considered.

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78. The WTO system is geared towards conflict resolution and the withdrawal of trade concessions is only used as a measure of last recourse. In WTO the resolution of conflicts has a sliding scale starting with (1) agreement of the parties at any point during proceedings through consultations; (2) after determination by a panel of a violation of WTO rules, a request to bring the incriminating measure or practice into conformity with the WTO; (3) if this is not possible, the offering of compensation (by means of new or enlarged market access opportunities, for example through tariff reductions or other liberalising commitments), and finally, if neither (1), (2), or (3) are possible; (4) the authorisation to suspend an equivalent amount of concessions.
79. From a competition angle the withdrawal of trade concessions may seem to contradict the objective of increasing competition, as its effect would be to lessen access opportunities to a market. In GATT/WTO practice, however, the ability to withdraw trade concessions has actually had a liberalising effect, and has pressed countries to bring their practices into line with GATT law. Countermeasures have only been authorised once.

FINANCE AND INVESTMENT ISSUES

BY

**EDMUND L. MANGAN
CONSULTANT TO THE OECD**

Background

The investment situation facing the steel industry world-wide is complex and like the industrial sector of which it is a part, varies considerably between countries and regions. The world's developing steel industry has been characterised in general by over capacity, inefficient and oversized labor forces, obsolete facilities, and underperformance in both financial and economic returns. The situation is further complicated, particularly in Eastern and Central Europe, by drastic declines in domestic steel consumption and limitations in export opportunities due to trade restrictions brought about by other steel producers interested in protecting their own domestic markets. Steel markets in OECD countries and the dynamic non-Member areas, for the most part have remained more buoyant. However, even though the market and economic climate appear better in Latin America and Asia there are still challenges in attracting capital that must be addressed.

Industry management in general has a reputation for focusing on large investments in plant and equipment related to technological and production improvement rather than financial returns. Particularly under government control, there was the tendency for over-investment, and there is a lingering perception in the financial community, that this is still the case. Potentially more troublesome is an environmental legacy that must be considered, involving the costs to rebuild facilities, remediate land and modify operations, in order to comply with ever stricter environmental guidelines. Each of these is a formidable challenge to overcome. Taken together, they make raising funds for investment in the steel sector one of the most difficult tasks facing industrialists.

In response to some of these problems and with support of the major OECD countries, international development and lending institutions have adopted a strategy limiting direct lending for new investments in commercially oriented state owned enterprises (SOEs). The aim is to support economic reforms in the industrial sector by limiting lending primarily to facilitate downsizing and to promote post-privatisation restructuring. Investment decisions are believed to be best made by private owners or joint ventures, not governments, because: (i) they are subject to a market test as to the profitability of the investment; and (ii) private owners with capital at stake, or managers chosen by private owners, are likely to make non-politicised investment decisions.

Experience supports the principle that private firms generally have higher productivity and perform better than their state-owned counterparts. The evidence is that privatisation increases profitability, sales, operating efficiency and capital investment and that new private firms are more dynamic and generate higher profits than state firms. Throughout the world, privatisation and private

sector development are top priorities in economic reform along with the development of a growing banking sector increasingly able to intermediate-funds according to commercial criteria. In the absence of direct government support, both state owned and private sector enterprises are facing the same challenges in raising investment funding.

Without government support in the form of loans, guarantees or favorable commercial regulations, investment decisions must stand on their own merits. The investor or lender must be convinced that the project is credible, that the risks are acceptable and that there is a high probability that the financial returns will be obtained. In addition the investor is faced with political and economic risks in countries where regulatory and legal systems are different and in some cases suspect. Clearly direct foreign investment and joint ventures are not easy to find or put together. That is why there is a lack of these activities in the steel subsector throughout the developing world.

This negative picture of investment prospects in the steel industry is the background that effects investor decisions and this discussion. The issues pertaining to risk must be dealt with in order for an investment project to proceed. In the last five years there have been some very successful investment activities and many international investors believe that there is more money available than good projects in which to invest. With proper planning, careful project preparation and clear presentation, it may be possible to access funds for the industry.

Investment associated with privatisation

For many years, governments used internally generated funds, loans from international lending institutions, bilateral loans and grants and a variety of other sources to support the development and operation of their domestic steel industry. The issue now facing these governments is how to withdraw this uneconomic support. In this light, the privatisation successes in the steel industry in Latin America are prime examples of non-investment activities by government that have transformed inefficient state owned monopolies to domestic and internationally competitive enterprises able to participate in the world market. These transformations were initially dependent on government political will to offer the enterprises for sale at market values rather than at inflated book or asset values that would have prevented new owners from obtaining favorable financial returns. Funding for the purchase, restructuring and modernisation of the facilities came primarily from domestic investors and institutions able to take advantage of reduced financial overhead and the opportunities of strong domestic steel markets. After privatisation, the new owners of these enterprises were able to develop and execute business plans including appropriate technical assistance, that had the credibility to attract support from domestic and international lenders and investors.

In the privatisation of the state portion segment of the Mexico steel industry, which has been the subject of earlier discussions at OECD workshops, the auction process gave credit to investment commitments made by the prospective buyers. This resulted in funds flow to the state and to the former SOEs. It also forced the other private sector producers to invest in order to maintain their competitive position. Overall it is estimated that in addition to the one time purchase investment of about US\$500 million, made by three groups for the three major facilities, there has been over US\$2 500 million in additional funds invested by the entire industry in the last five years. See Annex 1 for additional details. The result is a highly competitive modern steel industry able to quantitatively and qualitatively satisfy domestic market demands and participate in the world markets.

Of the three purchasing groups in the Mexico case, two were domestic investors and the largest was lead by people that had no previous experience in steel. They were careful to associate with

recognised international steel producers in order to have access to technical assistance. Similar results occurred in Brazil, where domestic banks led the purchasing groups in the privatisation process. In both these examples, direct foreign investment with full repatriation of future profits was allowed, but played only a small part in the final outcome. Domestic investors aware of the opportunities in their domestic steel markets were the major players in purchasing these facilities and in developing business plans with outside technical assistance that were credible to both domestic and foreign post privatisation investors.

The third purchasing group in the Mexico case is an example of direct foreign participation in privatisation and investment. This group represents an international producer with world-wide market connections who was able to develop business plans on a broader marketing scale and take advantage of lower cost production facilities in their overall production structure. On the basis of these business plans this firm has been able to attract investment lending from international commercial banks. In general, participation by other foreign firms in Latin American privatisation has been limited to situations where there were previously strong ties between the domestic and foreign firms, or where there were joint ventures or shareholding in place and strong economic and political connections between governments.

The governments in these examples created the environment that mitigated the political and economic risks. This allowed the private sector groups to develop the business plans that could deal with the commercial risks. Variations of this process have been repeated in several Eastern and Central European countries where different examples have led to similar results, even in countries that have used mass privatisation as the vehicle for government to disinvest in the industrial sector. In the Czech Republic, for example, private sector shareholder funds were created to buy or hold ownership for the broad base of new owners and provide corporate governance for the privatised corporations. These funds have acted like the banks in the Brazil example. They have created boards of directors, appointed management and directed the strategic planning process resulting in the development of effective business plans and investment projects.

Finance related to trade

Trade has always been and will remain a sensitive issue, particularly in OECD markets. The above examples show that where there is an established domestic steel market and a government willing to price assets realistically or transfer them without undue financial burden, there have been financial flows to support post-privatisation investment in the steel industry. In other parts of the world, where internal steel consumption has declined significantly and there is not a sufficient domestic market to support the industry, different scenarios are playing out.

Faced with closure, and potential political backlash, some governments have kept industry in state hands or chosen mass privatisation of a part of their shareholdings, giving the majority of shares to workers, managers and the public. This has left managers, with little oversight by the new owners, free to pursue their own ideas in keeping their facilities in operation. At the same time government, which is interested in the long term health and competitiveness of the industry, is looking for new sources of funds in exchange for the remaining shareholding. It is yet to be seen whether this scenario, which lacks an element of corporate governance, will generate the needed funds for investment.

The managers seeking to preserve their enterprises, have become creative in looking for investment funds to modernise their facilities and are increasing exports to world markets in order that they can earn the needed funds. Through competition in these markets, these producers are exposed to customer requirements for tighter specification, higher quality demands and better delivery and service requirements. They must deal with financial terms and conditions that are suitable in their production

environment and at the same time satisfy the customer. It is doubtful that all of the funds needed can come from trade, but it is likely that the entrepreneurial producers will be in a better position than their domestic counterparts to deal with their present depressed financial conditions and to take advantage of their domestic markets as the economies improve.

Institutional support

In most of the developing world, international lending institutions like the World Bank and other development banks are providing support for industry in various forms. The general theme is to convince governments to exit industrial activities and encourage the private sector to come forward to provide corporate governance and investment funding. In many countries, loans and credits are available to assist in privatisation, in downsizing large industrial enterprises and for environmental improvements. Although the following paragraphs relate to programs that are in place or being developed primarily for the economies in transition in Eastern and Central Europe they give an indication of institutional thinking world-wide.

Privatisation and post-privatisation loans have been developed to finance a large range of possible activities including; retraining and other labor related activities, divestiture of social services to local governments, the costs of physically closing facilities and site reclamation, such as the reconversion of buildings, roads and electricity networks for other potential users. In some cases there has been assistance to facilitate social asset divestiture by providing finance to municipalities that assume responsibility for critical social services previously financed by enterprises. Credit lines intermediated through the banking sector have been approved on the condition that the final beneficiary be a private enterprise (at least 51 per cent of the equity must be privately held). So even though these loans may be through government banking sector intermediaries, they and the beneficiary must perform like their private sector counterparts. In all cases satisfactory business plans are a prerequisite and must be presented by the enterprises and approved by the banks.

In order to reduce political risk for the potential investor international funds are also available to guarantee operations which are government sponsored and available through the domestic banking systems. Two types of guarantee operations have been developed, individual guarantees and umbrella facilities.

Individual guarantees are aimed at catalysing foreign investment in a particular local enterprise. They guarantee against government policy reversals or interference that could negatively affect the returns of a specific project and the commercial debt servicing on loans from foreign lenders. Interventions typically disallowed include; retroactive taxes on imports and exports, revocation of import and export licenses, inconvertibility, and among others restrictions on transfer of foreign exchange. These guarantees have been oriented primarily toward local enterprises involved in joint ventures with foreign firms.

Umbrella facilities guarantee against specific types of government interference in the policy environment that could negatively affect contracts between private input suppliers or lenders and domestic firms purchasing inputs. The difference between the umbrella facilities and the individual guarantees is that, under the individual guarantees, there is one project with lenders and borrowers that are pre-identified whereas under the umbrella facilities, anyone with a qualifying contract may purchase a policy. The types of interference that are covered are broadly the same and typically the firms involved must be private enterprises (at least 51 per cent privately owned) or are clearly in the process of becoming private.

World-wide there have also been a variety of loans and credits provided to improve the environment. They typically support investments that reduce pollution with or without adding to the productive capacity of firms. The most sought after projects are related to a combination of efficiency gain and waste reduction, where the mere reduction of pollution (i.e. recycling of emissions) adds to output. Several of these have been developed which make the environmental investment viable under commercial terms.

Business planning

All of the above examples of successful privatisation and investment, and the discussion of institutional support have in common the requirement for a satisfactory business plan. The lack of a satisfactory plan is the major problem for most firms seeking finance and investment. It is typical for a newly privatised firm in the steel industry in a developing country to meet all of the privatisation criteria but fail to understand the process of business planning and the need to develop a complete and sound plan. The plan is the document through which the investor can understand the enterprise, its business potential, and the project that is the focus of the investment. It is the only vehicle available to the firm to deal with the commercial risks of the project and to quantify the risks that the investor is being asked to bear.

The planning exercise is usually an eye opening one for a company since it forces answers to many difficult questions. Although most firms have utilised outside technical and financial assistance to help prepare acceptable plans, the involvement of management of the firm at each phase is critical. The following paragraphs provide an abbreviated business plan description that highlights the most critical areas that must be covered in developing a plan for the enterprise. Included in Annex 2 are the additional details that must be included in order to present a project to lenders or possible investors.

Market information

The market into which the company will sell the product must be described along with the nature of market penetration envisioned, (new market, established market or mature market). The fit between market and product is a key element in determining the risk associated with the project and the reliability of the projections used in the plan. Depending on the nature of the project, any financing schemes that the project may extend to potential customers should be outlined.

Target markets need to be identified along with an explanation of how the customer base has been segmented and targeted. The plan needs to distinguish between the existing customer base and new targets, and describe the scope of the market and expected strength of demand. In particular, if export is planned, a clear explanation of how this will be achieved and which export markets will be served must be detailed.

The anticipated *market share and sales volume* for the firm provides the basis for the firm's operating and financial plan. The market evolution over the last 2 - 3 years, and how it is expected to evolve over the next 5 years should be detailed along with estimates of the firm's market share and sales volume achievable over the next 2 - 5 years. Existing purchase commitments or contracts already secured along with these trends and evaluation of the market with reference to the firm's products, the competition and the customers provides an understanding of the position of the firm in its markets.

A review of the *competitors* in the target market provides an insight into the competitive position of the firm. Answers to questions like: "Who are the competitors and what is their market share? What

have these competitors been doing over the past three years and what are their future plans? How are they likely to react to this project?" help the firm and the investor to understand the market soundness of the proposed project.

Pricing strategy is a key element in the development of financial planning along with a comparison, to the competition. Details should be included regarding plans to penetrate the market, maintain and increase market share and maintain margins given the pricing strategy outlined. An analysis of the historical evolution of product prices, and an assessment of the key price drivers (cost of inputs, consumer sensitivity and substitution products) should be included. If the products are to be exported, the pricing strategy for the export markets and details regarding which products will earn hard currency and which will earn local currency are necessary.

The current channels of *distribution and sales* should be described along with the proposed plan to sell and distribute the product, including; the organisation/motivation of the sales force; distribution network for the products; cash collection mechanism after invoicing; and advertising/brand awareness strategy. It is important to distinguish between the existing distribution network and any new network that needs to be set up.

Management and organisation

The strength and quality of management is crucial to the success of the firm and any project it proposes. An understanding of the strengths and weaknesses of the firm's management can be provided through a description of:

- the management structure and the relationship between the various departments and/or individuals (use of a diagram may help);
- the function of each department;
- the information flow between the departments and management;
- how performance is monitored; and in the case of joint venture projects,
- which project sponsors are providing members of the management team.

For the most important management positions, such as managing director, finance director and production director, it is helpful to attach short resumes including names, areas of responsibility and relevant experience.

Key operating assumptions

The plan would detail, year by year, key assumptions regarding sales volume, price and production program by product and in total including a breakdown of operating expenses including variable and fixed cost estimates of:

- *labor*- number of employees and average salary;
- *raw materials*- by local and foreign currency;

- *energy*- domestic and imported;
- utilities and transport and other variable costs;
- sales and administration;
- *capital expenditures*-on a yearly basis for maintenance;
- *working capital* -breakdown of assumptions and details concerning, raw material and finished goods inventories, terms of payment to customers and to suppliers:
- financial charges and other fixed costs.

Financial projections

Complete financial projections must be provided with schedules indicating the timetable for costs or expenses incurred, or revenues generated, and must include;

- profit and loss/income statement, including anticipated dividends;
- balance sheet, beginning with opening year going forward;
- operating cash-flow and net cash-flow describing sources and uses of cash, linked to the above two points;
- debt schedule and interest schedule indicating life and terms of existing/new debt and the interest to be paid on the loans;
- depreciation schedule for assets;
- working capital schedule, highlighting changes and assumptions during loan; and
- anticipated tax schedule that the company will face during life of loan.

Observations

This brief paper attempts to shed some light on the complex issues surrounding finance and investment in the steel industry in the developing world. The paper includes a combination of examples and insights by the author that attempt to show what has been, or is being done in various parts of the world. There have been successes in various regions in the privatisation of a large portion of the steel industry that lead to further finance and investment to improve competitiveness. Activities by the international development institutions are aimed at furthering the privatisation effort and mobilising private sector resources to replace government support. But, regardless of whether an enterprise is private or is still in government hands, it faces the same challenges and difficulties in the search for ways to finance investment in steel plant and equipment.

The main message is that investors do not like risk. Governments and enterprises seeking finance and investment in their steel industries must deal with the real and perceived risks that concern the

investor. Political and economic risks are the responsibility of government, but commercial risk is equally, and in some cases more important, to the investor. It can and must be dealt with by the enterprise through the business plan. Throughout the world especially in the dynamic non-Member countries, the main issue of interest to a potential investor is the health of the local market and the competitive position of the firm within that market. One often made mistake is to focus only on technological issues and to equate production proficiency with competitiveness. The development of a project must integrate all of the corporate functions from projections on market supply and demand to technical performance in tons and yield. The business plan is the vehicle that brings together information on the enterprise, the project and the expected results and puts this in financial terms. It is the single most important tool to deal with commercial risk and the single most important step in successfully funding finance and investment.

ANNEX 1 - MEXICO STEEL PRIVATISATION

The steel industry in Mexico is undergoing a rebirth of domestic and external competition. The owners of the privatised firms are now in a tough battle against the other private sector companies like HYLSA and with the minimills. The new top management of GAN, VILLACERO and ISPAT is working to create a new customer driven culture at all levels of the companies. Contrary to the situation during public ownership, all companies presently think of domestic and foreign markets as one market in which prices are determined by the market and quality of the products is the same.

The investments made by the steel industry focused on improving the productive capacity and achieving technological modernisation. Some companies invested in expanding their plants, while others opted for changing their production mix to take advantage of the increase in demand for finished products or to tap new potential higher value added markets. As a result of these investments, the Mexican steel industry is not only producing more output but at a higher quality level to face the increasing competition at home and in international markets.

Grupo IMSA, paid \$39 million for Aceros Planos as part of the GAN consortium which purchased AHMSA. Shortly after privatisation, IMSA withdrew from the GAN consortium. In 1992, it announced that it would invest \$90 million in equipment, production lines, and power installations. The facility started operations in 1994 and is expected to produce 900 000 tons per year with a workforce of around 350 employees.

VILLACERO, paid about \$170 million for 80 per cent of SICARTSA I. In the first two years of privatisation it reduced production costs by 30 per cent and reduced its labor force from 4 094 to 3 246. During the first six months of private ownership, sales had grown by 20 per cent over the previous four month period. Company officials declared they were considering making additional investments amounting to \$100 million to increase capacity to 1.6 million tons. In 1993, the cost of production were reported to be the lowest in the preceding six years and sales had surpassed the levels during state ownership by 50 per cent⁸⁰. Villacero subsequently bought the remaining government share for \$42.5 million and as a result has gained full control of the company. By September 1994, the productivity levels had reportedly doubled and yields had improved substantially⁸¹. After privatisation capacity utilisation has increased rapidly and is estimated at about 100 per cent in 1995. At present, VILLACERO is considering a change in the product mix in order to compete in the growing and higher value added flat products market.

GAN: The new owners of AHMSA paid an estimated \$300 million plus a promise to invest an estimated \$400 million more. In fact their business plan now includes investment of an estimated \$800 million from 1992-2000 to make the company globally competitive. They adopted the modernisation plan made by SIDERMEX and the World Bank and added to it other elements that fit with the group's

80. According to Julio Vollareal, President of VILLACERO, in an interview in Acero, August-September 1994, page 5.

81. Ibid.

overall business plan which was created with the technical assistance of Hoogovens Technical Services. Production is expected to increase from 3.1 million tons to 3.6 million tons with major investments envisioned throughout the plant. During 1992, the new owners were able to lower operating costs by \$64 millions in the ironmaking and steelmaking areas⁸². By June 1993, the labor force was further reduced by 25 per cent from the number employed at the time of privatisation. At this time shares equivalent to 5 per cent of capital were offered on the Mexican Stock Exchange. Recently the company received the international ISO 9002 certification, a development that indicates product quality is now at internationally accepted standards.

IMEXA paid \$45 million and promised investments of \$50 million to become the new owner of SICARTSA II. Upon taking possession of the company, it undertook an immediate personnel cut of 300 workers. In June 1992, its workforce was down to 660. Capacity utilisation increased far more than the prevailing 25 per cent at the time of privatisation. Production has increased to 2.2 million tons in 1994 and is expected to reach 3 million tons in 1997. Productivity increased by four times as they were able to increase it from a level of 5.5 man hour per ton before privatisation to 1 man hour per ton in 1994. IMEXA exports most of its production and a limited proportion is supplied in Mexico. The average age of workers in the plant is 27 years giving IMEXA a major advantage in the long run. The committed investments were made in the first two as opposed to the stipulated five years, along with an additional \$50 million investment to upgrade the plant and an increase of \$150 -200 million working capital. IMEXA became the first metallurgic company in Mexico to obtain government certification that it completed its committed environmental plan.

HYLSA, the largest private sector producer faced the new competition aggressively. Before privatisation, the firm had the advantage of competing against public sector companies which had inherently higher costs and therefore set market prices at a higher level. The change in competitive environment required the elaboration of a new strategy. After privatisation, HYLSA announced its decision to invest \$400 million to build a state-of-the art thin slab casting mill. This new facility now produces high end steel for cars, appliances, and ships. Additional investments were also made to improve the efficiency of its old plant and in an effort to reach the same level of efficiency as its US competitors, the company cut its workforce by 40 per cent⁸³. In the short term, the firm enjoys the loyalty of its customers because of its tradition of reliable supplies and customer driven organisation, two things which the new private owners of parastatals are still trying to create. Funds for investment came from various domestic and foreign banks and investment institutions along with trading companies that handled HYLSA products and customers. HYLSA has also had a tradition of excellent labor relations, unlike AHMSA and SICARTSA, there has been no labor strike during its 50 years of existence.

In its annual report for 1994, the Mexican steel industry chamber, CANACERO declared that the Mexican steel industry has benefited from large new private investments since privatisation. It estimated that, between 1990-94, the steel companies, excluding IMEXA, made new investments amounting to \$2 503 million. The new investments mentioned in the case of AHMSA, IMSA and VILLACERO, were for the most part undertaken during the period of 1992-1994. For HYLSA it is known that these investments are to a large extent a direct result of having lost its bids to acquire any of the privatised steel companies other than AHMSA's southern division, and hence the bulk of HYLSA's investments also took place in the 1992-94 period.

82. American Metal Market, September 1993, page 14.

83. American Metal Market, September 3, 1992, page 1.

New Investments in the Mexican Steel Industry 1990-94

Company	Investments (million \$)
HYLSA	767
AHMSA	736
IMSA	182
VILLACERO	148
OTHERS	670
TOTAL	2 503

Source: CANACERO

Others include Simec, Aceros San Luis, Tallaeres Y Avero and Daecero, CS Guadalajara, Mexinox and other small producers.

ANNEX 2- BUSINESS PLANNING

This annex covers the additional details to be covered in a business plan developed to include an investment project component.

Project description

A full description of the project is necessary. Various sections of the overall firm's business plan must be rewritten to reflect the operation envisioned before, during and after the implementation of the project. A technical description is necessary covering what is planned, the change in technical performance factors that impact cost and the impact on other operations. Details should be provided in order to understand the changes in markets, products and performance along with the investment program detailing what will be purchased with the investment funds, what will be supplied from other sources and/or purchased with other funds and when the activities will take place. If it is a greenfield site or other new facility a full description of the facilities and their operation are necessary.

Project cost

The investor requires an accurate breakdown of the project costs and the use of funds, particularly the use of the investor funds. This should be available at a fairly early stage of project preparation. Uses of financing may typically include:

	Foreign Currency	Local Currency	In-kind Contributions (1)
Building/facility			
Machinery			
Installation			
Start-up expenses			
Training			
Professional fees			
Working capital			
Interest during construction			
Total			

- (1) In-kind contributions refer to elements within the project that do not need to be purchased but represent contributions (usually in exchange for equity) such as land, buildings, equipment, know-how, licenses. This type of contribution often occurs in Joint-ventures.

Some of the elements to be incorporated are:

- how the costs have been estimated (i.e. supplier costs, engineering quotes, featured quotes), by whom -- internally or by an independent contractor), and the estimated degree of accuracy in these costs;
- a timetable indicating when the costs will be incurred and details of any costs that have already been incurred;
- the valuation methodology of in-kind contributions or of existing assets;
- an explanation as to the sources of equipment, materials, etc., particularly if they are being provided by one of the sponsors;
- an explanation of cost contingency built into (your) project costs; and
- envisaged potential overruns, and back-up funding in the event of cost overruns.

Ensure that the project cost takes into account any eventual costs of registering security and insurance policies. These costs are usually incurred before the financing agreements are signed, but may be paid for from the financing provided to the company.

Implementation and procurement

The investor may rely on the sponsor to implement directly, or to appoint contractors to implement, the project in a timely manner and in a cost-effective way. In order for the investor to judge the risks connected with project implementation, the following should be provided:

- summarise the implementation arrangements; including the name of agencies charged with implementation of individual components of the project;
- provide the rationale for the choice of agencies, and the background and details of their work;
- describe, if applicable, the nature of contracts with these agencies, and any completion or progress payment schedules and performance bonds associated with implementation of the project;
- provide a detailed implementation disbursement schedule;
- indicate start-up dates within the project and how the dates will be achieved; and
- describe back-up plans in the event of time delays in the start-up.

The investor requires transparency and arm's length procurement when approving the funding of a project so the sponsor is asked to address this carefully. In particular:

- indicate and justify the proposed method for purchasing goods, services, and equipment with investor funds;
- confirm that the goods, services and equipment have been purchased at arm's length on proper commercial terms (indicate where there may be exceptions to the arm's-length condition);
- state the nature of the contracts (turnkey, etc.) for the project.

In some cases the investor will appoint a third party to examine the progress of the project, and to report on any potential bottlenecks or cost overruns.

Sources of funding

It is necessary to identify the sources of funds to cover the costs. Typically, the investor is only one of several sources of financing. The investor is expected to invest directly in equity and to identify other sources of financing. In the case where the project involves the expansion of an existing facility, the investor may be prepared to finance the project itself provided the exposure in the company remains within a certain percent of the long-term capitalisation of the company. A typical breakdown of sources of funds would be:

	Hard Currency	Local Currency	In-kind Percentage
<i>Equity Cash</i>			
Local Partners			
Others			
<i>Equity in Kind</i>			
Local			
Foreign			
Other			
<i>Debt</i>			
Investor			
Other Source (2)			

(2) This may include sources of cash generated by the initial cash-flows of the project.

Typically the investor seeks cofinancing from other investors for purposes of:

- risk sharing - to see that entities with direct experience in the business are willing to risk their money in support of the project as a worthwhile venture;
- catalyst - the investor wants to encourage other financing entities to participate in the project, either through loans or through equity.

If the sponsor is experiencing difficulty in attracting other financing, especially debt, it may be possible for the investor to offer assistance in attracting other lending institutions once the financing structure has been agreed. Where the project involves the extension of existing facilities, a current balance sheet, income statement and cash-flow statement (audited to international standards if possible) should be provided of the existing business.

Equity

Identify the equity partners and the details of their participation. This is critical and should include details regarding; who is putting in equity and over what period; how much equity is contributed in cash versus in kind; how has the allocation of shareholdings been divided and on what basis (include employee/worker participation if relevant); and if the investor is being asked to provide equity, how exit is envisaged if the investor does not expect to be a permanent equity investor.

Loans

Details should be provided regarding existing and anticipated loans, including; who is providing loans to the project; who are the anticipated senior and subordinated lenders; what currencies are involved; whether any of the loans are tied to conditions such as subsidised interest rates or procurement issues; what are the terms and conditions of all the other loans involved in the project, or already existing on the project balance sheet.

Relevant supporting agreements

Describe agreements, including; sales agreements/off-take agreements; any guarantees by sponsor/third parties; additional support agreements; including government subsidies, tax holidays, etc..

Collateral and security

If possible, describe the nature of the security available to the lenders of the project. In particular, it is important to detail the types of mortgages, liens and pledges that already exist.

Financial overview and anticipated performance

This provides the means to evaluate and assess the ability of the project to generate sufficient cash flow to service its debt or pay dividends in the case of investment. The projections should be for the same number of years as the loan/investment period.

Environmental information

A typical environmental mandate may require that “projects promote activities that are environmentally sound and will contribute to sustainable development.” It is therefore necessary that the financing proposal includes sufficient information on the environmental aspects of the project to enable its environmental implications to be adequately assessed. Initial information should the location of the project site(s) including:

- description of historical and current land uses associated with the site(s);
- description of construction activities and physical modification involved in the project;
- proposed measures for environmental enhancement and damage mitigation;
- agreed responsibilities regarding any contamination and/or liability issues; and
- any corporate environmental policy statement.

Copies of environmental audits or impact assessments that have been carried out for the project should be included. National, regional and local environmental and worker health and safety requirements relevant to the project should be described.

Regulatory information

The investor needs to understand the regulatory environment in which the proposed project will operate. The following areas should be covered where relevant: describe what government licenses or permits will be required in order to take the project forward, how they will be obtained and how long it is estimated that this will take. Describe to what extent raw materials are subsidised by the relevant government. Also indicate whether there are any likely restrictions on the importation of relevant machinery. Describe the nature of border tariffs or quotas. If export of the product is intended, indicate whether export markets have restrictions on imports.

GENERAL

**AGENDA FOR THE WORKSHOP
ON STEEL TRADE AND ADJUSTMENT ISSUES**

1. Opening statements

[Day 1: 09.30 - 09.50]

OECD Deputy Secretary General, Mr. Taniguchi, will open the meeting and address various issues on the agenda.

The Chairman of the Steel Committee will then provide a brief history of the role and activities of the Committee, following which participants will be provided with an opportunity to make any general comments.

2. Session 1: Market and industry overview -- The current situation and the short term outlook

The situation in steel markets is relatively strong world-wide. There are, however, signs that market peaks may have been reached in certain areas, and that cyclical downturns may be approaching. Session 1 will provide delegates with an opportunity to examine the current situation in detail, and to exchange views on the short term outlook.

– **Global overview** [Day 1: 09.50 - 10.10]

The Secretariat will present a global overview, providing information on a regional basis. The report will identify shifts that have occurred in steel capacity and supply and demand patterns, and provide insights into the short term outlook.

– **Area reports** [Day 1: 10.10-13.00; 14.30-15.30]

A more comprehensive examination of the situation in steel will occur, based on an exchange of views and information among countries. Designated countries will make opening presentations lasting 5 to 10 minutes. Following the presentations for each region, all countries will be provided with an opportunity to provide further information and to discuss issues and developments.

– America (North and South) - *Presentations to be made by OECD countries and DNMEs.*

– Europe (including central and eastern Europe) -- *Presentation to be made by an OECD country.*

– Asia-Pacific - *Presentations to be made by OECD countries and non-Member economies*

– **Conclusions**

3. **Session 2: Steel trade issues**

Steel is a widely traded material which has been subject to numerous governmental measures over time. As regards imports, the measures have included relatively high tariffs, import licensing, formal and informal trade restraints, safeguard measures, price controls, and antidumping and countervailing duties. On the export side, certain countries have taken measures designed to support exports.

Session 2 will provide delegates with an opportunity to discuss how the situation in steel trade is changing in their countries and to exchange views on current and emerging issues. In this context, Delegates will be invited to share views on how changes made in trade rules in the Uruguay Round are likely to affect steel trade. Efforts to adopt more far-reaching disciplines through a multilateral steel agreement will also be addressed.

[Day 1: 15.30 - 18.00]

– **Background**

The Secretariat will present an overview describing how global steel trade patterns have shifted over the past 10 to 15 years, on a regional basis.

– **Multilateral issues**

The effects of the Uruguay Round agreements on steel trade will be discussed, as will issues related to the negotiations that have been underway for several years on a multilateral steel agreement (MSA). -- *Presentation(s) to be made by OECD country(ies) and, perhaps, non-Member economies.*

– **The situation in trade**

Delegates from several OECD and non-Member economies will make presentations of 5 to 10 minutes. The presentations will focus on the role of imports and exports in their economies, their steel trade policies, and their steel trade objectives.

Following the presentations, all countries will be provided with an opportunity to discuss issues and developments, and provide further information.

– **Conclusions**

4. **Session 3: The situation in steel -- The role of government in selected areas**

[Day 2: 09.30 - 13.00]

Conditions in the world's steel industries are significantly influenced by government policies. The nature of these policies, and their effects, vary considerably among countries. Session 3 will provide delegates with an opportunity to share information on their respective situations and exchange views on key issues.

Following the presentations (each of which will be approximately 5 minutes in length) under each item, delegates will have an opportunity to exchange further views and information on issues.

In each area, presentation(s) will be made by OECD country(ies) and/or the non-Member economies.

- *Policy objectives for steel*
- *State ownership and privatisation)*
- *Competition policies*
- *Finance and investment*
 - Government policies
 - Medium-term investment strategies
- *Energy and the environment*
- *Other*
- *Conclusions*

5. Workshop conclusions

[Day 2: Afternoon]

The workshop rapporteur(s) will be invited to provide a summary of the key issues addressed at the Workshop, following which delegates will be provided with an opportunity to share their views, including possible follow-up.

SELECTED ISSUES FOR DISCUSSION AT THE WORKSHOP ON STEEL TRADE AND ADJUSTMENT ISSUES

Session 1: Market situation and industry overview -- The current situation and the short term outlook

Background

The situation in world steel has improved significantly in recent years. From a recent low of 723 million tonnes in 1992, crude steel production recovered to some 748 million tonnes in 1995. In the process, steel producers in many countries were able to eliminate operating losses and achieve noteworthy gains in profitability. The short term outlook, however, is uncertain, as there are signs that markets in certain areas -- notably in North America and western Europe -- are weakening.

Market situation

- Steel markets in eastern Europe experienced sharp growth in 1995, while expansion continued in Asia, despite a sizeable decline in Chinese steel demand.
- How durable is the recovery that is occurring in most of eastern Europe, and what are the prospects for further growth? What steel consuming sectors are driving the recovery? To what extent is the recovery tied to exports of finished manufactured goods to Western Europe and other third markets?
- Can the continued growth in Asian steel consumption be maintained at current levels? What factors could restrict or lower growth rates? Could growth rates in fact increase?
- In Asia, to what extent are changes in domestic steel demand tied to developments in other countries (i.e., to what extent do developments in the larger economies -- such as Japan and China -- influence steel demand in other economies in the region?).
- In North America and western Europe, generally strong market conditions in steel are beginning to ease. Is a downturn underway, or are conditions expected to remain relatively good?
- In Latin America, steel demand is expected to grow more rapidly in 1996 than in 1995. What are the factors driving growth, and what are the prospects? What effect are regional trade agreements expected to have on overall steel consumption levels?
- What is the situation in steel markets in other areas (notably Africa and the Middle East), and the prospects?

Industry overview

Financial situation

- The financial situation in the steel industry has improved markedly in most areas in recent years:
 - In western Europe and North America, financial losses recorded several years ago have largely vanished, with companies now reporting positive results. The situation in Japan is also improving, with steel companies returning to profitability during the first half of fiscal 1995.
 - In other parts of Asia profitability in steel appears to be strong, except in China, where tight monetary conditions have reportedly created financial difficulties, particularly for metallurgical firms.
 - In central and eastern Europe, a growing number of firms are posting profits.
- How much of the improvement in steel industry financial performance is due to improved market conditions, and how much relates to efforts to reduce costs? What are the prospects?
- How do financial returns in the industry compare to returns in other sectors? How does the financial community generally view the industry for purposes of making loans (i.e. high, medium or low risk)?
- Capital requirements to maintain facilities and invest in new plant and equipment are high in the steel industry? How is investment in steel world-wide being financed? How much, for example, is being generated from retained earnings and depreciation, and how much is being generated through borrowing and the issuance of equity?
- What are the principal financial issues facing steel companies world-wide?

Industry structure

- What are the respective roles of integrated steelmaking (blast-furnace based), minimills (electric furnace steelmaking for carbon steel products) and specialty steel mills (stainless steelmakers) in the world's steel industries, and how are these roles changing in different regions? What are the implications of these changes?
- The problems affecting the steel industry in OECD countries are often linked to overcapacity. How is the supply-demand balance evolving on a global basis and in different countries and regions? To what extent are country, regional and inter-regional developments interrelated?
- With the growth in electric furnace steelmaking, increased attention is being paid to issues related to scrap. To what extent are scrap shortages foreseen on a country, regional and

global basis? What other raw materials issues are steel industries facing currently and in the near term?

Session 2: Steel trade issues

Background

Steel is a leading item in international trade, with some 25 to 30 per cent of production finding its way into international commerce. While some steel trade is in specialised products, much is in basically fungible, price-sensitive commercial quality products that can be readily sold world-wide. The ease with which steel is traded is evident in the significant shifts that have occurred in trade patterns over relatively short periods of time.

Problems related to shifting trade flows, subsidies, dumping and restrictive trade barriers have commanded the attention of governments for many years. Finding a long term solution has proven difficult, but efforts continue. In 1989, for example, negotiations were undertaken at a multilateral level to develop an effective solution to the long-standing problems facing the industry through a multilateral steel agreement (MSA). Countries participating in these negotiations believe that sharply limiting the types of assistance that governments can provide to steelmakers, while opening markets, would work towards eliminating non-competitive, excess capacity. At the same time, the opening of markets would make it more difficult for companies to “dump” steel since they would be exposed to more open international competition in their home markets.

Issues

- Steel trade flows have shifted significantly in recent years.
 - Most central and eastern European countries have been exporting more than 50 per cent of their production in recent years, in sharp contrast to the situation in the late 1980s. Much of this trade has been directed to western Europe, Asia, and, as exports to Asia declined, to North America.
 - In western Europe, steel imports have risen sharply in recent years, while exports have fallen.
 - In North America, record steel imports by the United States in 1994 declined in 1995, while exports rose to a near-record level.
 - In China, record steel imports in 1993 of some 36 million tonnes have since declined by an estimated 50 per cent, while exports have surged to record levels.
- Are the shifts that have occurred indicative of an increase in the volatility of steel trade? With trade being liberalised in many countries, will volatility increase? What are the implications?

- What kinds of objectives do countries have with respect to their situation in steel (the role of imports and exports)? What policies are being pursued to achieve these objectives?
- To what extent is steel trade regulated by governments and/or industry associations world-wide?
- What are the principal steel trade issues confronting steel industries world-wide?
- What are the principal barriers impeding steel trade world-wide?
- How are the results of the Uruguay Round likely to affect the terms and conditions under which steel is traded? What issues still need to be addressed?
- How could multilateral co-operation be enhanced to deal more effectively with current and emerging steel trade issues?

Session 3: The situation in steel -- The role of government in selected areas

Background

In the OECD area, governments have often played an important role in supporting the steel industry in their countries. Up until the mid-1970s, most of these policies were designed to facilitate industry growth. The sharp downturn that occurred in the market during the 1970s, however, combined with growth in steelmaking capacity world-wide, changed the situation significantly. With overcapacity threatening the viability of steelmaking communities, governments took a series of actions to support the industry and its workers. Much restructuring has since occurred, and industry conditions are far better than was the case one or two decades ago.

In the non-OECD area, governments have, similarly, played an important role in supporting the industry. State ownership, and trade and financial support have helped spur remarkable growth in the industry. In recent years, however, changes have occurred in the views of non-OECD economies towards their steel industries. Most state-owned facilities in non-OECD areas have been partially or completely privatised, while steps have been taken in many to liberalise steel trade. This includes central and eastern European countries, where significant restructuring is occurring.

Policy objectives

- What role are governments playing in setting objectives for the industry or individual steel companies?
- In what areas are governments setting objectives and how are they being set? Are, for example, objectives being set as regards capacity, production, exports, employment, investment, profitability, international competitiveness, environment, etc.?

- To what extent is the industry viewed as a strategic industry in national economies? As such, what special treatment does it receive?
- What “informational” activities are governments conducting in support of their steel industries (such as statistical and analytic reports, forecasts, and the like)?

State ownership and privatisation

- What role are governments currently playing in privatised or partially-privatised enterprises and/or enterprises that remain state-owned? How has this role changed in recent years, and how is it likely to change?
- In what ways do state-owned firms operate differently from privately held firms? What are the implications?
- What have been the costs and benefits of state-ownership in steel?

Competition policies

- To what extent are steel prices (domestic, import and export) subject to governmental controls or surveillance?
- To what extent are certain enterprises or industries able to buy steel at preferential prices?
- What sorts of activities are steel companies able to engage in on a co-operative basis, and in what areas is it strictly forbidden? To what extent, for example, are companies able to co-ordinate pricing, research, marketing and/or investment decisions?
- To what extent are mergers and acquisitions in the steel industry subject to government approval?
- What are the general views of governments regarding competition policy in steel?

Finance and investment

Government policies

- What role are governments playing in providing financial supports to the steel industry through loans, loan guarantees, grants and the like? To what extent is financial support being made on concessionary terms?
- In which areas are governments supporting steel industry research and development?
- What sorts of tax policies apply to the steel industry? Are there special provisions that apply to steel and related industries?

- What sorts of regulations apply to investment in the steel industry? What types of government approval are required for investment to proceed (such as environmental permits and other licenses and permits)?
- What guarantees or commitments are investors required to make (such as investment and job commitments)?
- What preferences or privileges are given to domestic and foreign investors in the steel industry, respectively?
- To what extent is imported machinery and equipment for the steel industry given preferential treatment?
- What sorts of rules are in place affecting the repatriation or re-investment of industry profits?

Medium-term investment strategies

- In which types of steel facilities are steelmakers currently investing? How is this investment likely to affect the volumes and types of steel products produced over the next several years (i.e. through the year 2000)?

Energy and the environment

- To what extent have governments developed specific environmental policies for the steel industry?
- What are overall governmental objectives for the steel industry in the area of environment?
- To what extent are steelmakers and their governments co-operating on a multilateral basis to address environmental issues in the industry? What sorts of technical co-operation are being pursued? To what extent is information on technologies to improve environmental performance being exchanged between OECD countries and non-Member areas?
- How significant are the investment and operating costs associated with equipment to control air and water pollution?
- How is compliance with environmental regulations enforced?
- How are governments assisting their steel industries to improve environmental performance?

Other

- What social (or labour) issues are currently confronting the steel industry, and how are governments addressing these issues?
- Globalisation in the steel industry is generally thought to lag behind globalisation in other sectors. Is the situation changing? What implications does globalisation have for the industry? What problems will globalisation help solve, and what new issues are likely to arise?

**PARTICIPANT'S LIST TO THE OECD WORKSHOP
ON STEEL TRADE AND ADJUSTMENT ISSUES**

29-30/10/1996

Jacobus AARTS	Head of Division/Chef de Division Commission of the European Union, Belgium
Leszek ACHELNIK	Manager of the Trade and Marketing Department, Huta Pokoj SA, Poland
Eyüp ALTAYLI	Executive Vice President Ekinciler Holding, Turkey
Carlos ANJOS	President du Conseil d'Administration de la Siderurgia nacional, Portugal
Rogelio ARELLANO	Permanent Delegation of Mexico to the OECD
Jun ARIMA	First Secretary/Premier Secrétaire Permanent Delegation of Japan to the OECD
Henri AUTRIQUE	Conseiller Adjoint Ministère des Affaires Economiques, Belgique
Eero AUVINEN	Counsellor Ministry of Trade and Industry, Finland
Peter AVERY	Principal Administrator Sectoral Issues Division, DSTI, OECD
André BARSONY	Head of the Liaison and Co-ordination Unit, SG, OECD
Charles BELL	International Trade Specialist Department of Commerce, United States
Jaap BORST	Economist, Department of Economic Studies Koninklijke Hoogovens, The Netherlands
Andreas BOTSCH	Assistant auprès du Secrétaire général du TUAC Commission Syndicale Consultative près l'OCDE
David K. BROOKMAN	General Secretary Iron and Steel Trades Confederation, United Kingdom

Maria Fernanda CAPELO	Directeur Direcção General da Industria Ministerio da l'Economia, Portugal
Ion CAPOTA	Deputy General Director Ministry of Industries, Romania
Ian CHRISTMAS	Deputy Secretary General IISI Bruxelles, Belgium
Tsai-Li CHU	Specialist Board of Foreign Trade, Malaysia
Hans COLLIANDER	Chairman of the OECD Steel Committee
Robert CROWHURST	Head, General Import Issues Department of Trade and Industry United Kingdom
Francisco DE CASTRO	Representante En El Comite Consultativo Sindicato Espanol Comisiones Obreras, Spain
Derek DE KORTE	Manager - Marketing Algoma Steel Inc., Canada
Joop DEN HOLLANDER	Shop Steward Trade Union - IB- FNV, The Netherlands
Aurel DOBRESCU	General Manager Research Institute ICEM s.a., Romania
Jos DUYNHOVEN	Regional Trade Union Official Industriebond FNV, The Netherlands
Gordana EARP	Deputy Assistant United States Trade Representatives for Industry, United States
Namik EKINCI	President of the Board Iron and Steel Producers Association, Turkey
Bob ELSOM	Executive Councillor Amalgamated Engineering and Electrical Union United Kingdom
Arne ERIKSSON	Councillor for Industry Permanent Delegation of Sweden to the OECD

Anna FABIAN	First Secretary Permanent Delegation of Hungary to the OECD
David FIFE	Senior Specialist, Primary Metals Directorate Industry Canada
Romain FOUARGE	Government Attaché Luxembourg
Raymund FURRER	First secretary Delegation permanente de la Suisse près l'OCDE
Murilo C. FURTADO	Assessor on Trade Affairs Brazilian Institute for Steel, Brazil
Antonio GADELHA	Coordinator, Secretariat of Trade Ministry of Trade, Industry and Tourism, Brazil
Felipe Alejandro GARDELLA	Embassy Counsellor, Economic Section Embassy of Argentina in Paris, France
Carlos GASTALDONI	Coordinator of Steel Planning Minister, Brazil
Jean GHISLAIN	Federation Director Groupement de la Sidérurgie, Belgium
Syamal K. GHOSH	Executive Director Steel Authority of India Limited, India
Enrico GIBELLIERI	Cadre Fédération des employés et des ouvriers de la métallurgie (FIOM-CGIL), Italie
Eleonora GRUEBER-KIRCH	Permanent Delegation of Germany to the OECD
Nae-Hee HAN	Research Fellow POSCO Research Institute, Korea
Lih Jen HUANG	Secretary - Board of Foreign Trade Ministry of Economic Affairs, Chinese Taipei
Tsong-Ying. HUANG	Assistant Vice President Commercial Division, China Steel Corporation Chinese Taipei
Wolfgang HÜBNER	Head of Sectoral Issues Division DSTI, OECD

Valérie INO	Assistant, Sectoral Issues Division DSTI, OECD
Svetlana INTERBRIK	Personal Interpreter to Mrs Smirnova Paris, France
Takuo ISHIZUKA	Member of Central Executive Committee Japan Federation of Steel Worker's Union, Japan
Toshikazu IZAWA	Assistant Director Iron and Steel Administration Division Basic Industries Bureau - MITI, Japan
Peter JORDAN	Attorney Wiley, Rein and Fielding, United States
Jean KEMP	Program Manager Department of Commerce, United States
Dong-Sun KIM	First Secretary Embassy of Korea in Paris, France
Hyun-Dai KIM	Deputy Director, Multilateral Trade Division, Ministry of Trade, Industry and Energy, Korea
Sung-Woo KIM	Delegate, Korea
Jerzy KNAPIK	Director General Huta im Tadeusza Sendzimira, Poland
Shigeki KOMATSUBARA	Manager, BIAC Paris, France
François LACROIX	Fédération Française de l'acier Usinor Sacilor, Paris, France
Wiktor LASZCZYK	Minister's Adviser Ministry of Industry and Trade, Poland
Byong-Woo LEE	Manager, Trade Affairs Pohang Iron and Steel Co., Ltd., Korea
Hsien LI	Director, Centre Asiatique de Promotion Economique et Commerciale, Paris, France
Shi Zun LI	Ministry of Metallurgical Industry People's Republic of China

M. Yi-Yu LIN	Deputy Director Second Department - Fair Trade Commission Chinese Taipei
Jose-Ignacio LOPEZ GONZALES	Directeur d'Information Statistique et Conjoncture (UNESID) Espagne
Jeffery LOWE	Attorney Counsellor, Department of Commerce United States
Karel MACURA	OS KOVO Presidium Member Czech Metalworkers' Federation Czech Republic
Edmund L. MANGAN	Consultant United States
Franco MANNATO	Administrator, Sectoral Issues Division DSTI, OECD
Ferdinando MARCHIORO	Principal Administrator Steel and International Relations Unit Commission of the European Union, Belgium
Christian MARI	Directeur Eurofer Brussels, Belgium
Dennis MARTIN	Manager, Trade Relations Dofasco Inc., Canada
Isidoro MARTIN GONZALES	Technical Director General Directory for Industry, Spain
M. Michel MATON	Secrétaire national de la centrale des métallurgistes, F.G.T.B. Sect. nat. C.M.B., Belgium
Jean-Claude MASSON	Ministère de l'Industrie, des Postes et Télécommunications et du Commerce Extérieur Paris, France
Ian MATTHEWS	Manager - International Affairs British Steel plc., United Kingdom
Gerhard MEINDL	Austrian Federal Economic Chamber Austria

Jiri MEJZR	Conseiller Ministère de l'Industrie, des échanges et Direction de projets spéciaux, République Tchèque
Klaus MÖBIUS	Delegierter des Bundesministerium Bonn, Germany
Jean-Louis MONTAGUT	Responsable Métallurgie Ministère de l'Industrie, France
Sin-Hag MOON	Deputy Director, Metal Division Ministry of Trade, Industry & Energy, Korea
Bernard MOURGUES	Fondation FERCIS Paris, France
Peter MULLONEY	VP and Assistant to the Chairman USX Corporation, United States
Risaburo NEZU	Director DSTI, OECD
Jukka NYSTEN	Counsellor, Ministry for Foreign Affairs, Finland
Leif NYSTROM	Ombudsman, Svenska Industritjänstemannaförbundet (SIF) Sweden
Ichiro OKAMATSU	Manager, Düsseldorf Office Kawasaki Steel Corporation Düsseldorf, Germany
Michelle O'NEILL	First Secretary Permanent Delegation of the United States to the OECD
Hong-Cheong ONG	Senior Analyst ISIS, Kuala Lumpur, Malaysia
Stanislaw PADYKULA	Undersecretary of State Ministry of Industry and Trade, Poland
Mark PAULSON	Chief, Iron & Steel Products Branch USITC, United States
Alain PESSON	Ministère de l'Industrie, Paris, France

Herbert PFEIFFER	Wirtschaftsvereinigung Stahl Düsseldorf, Germany
Werner PLATTNER	Austrian Federal Economic Chamber Austria
Len POWEL	Director Iron and Steel Department International Metalworkers Federation (IMF) Geneva, Switzerland
N.K. RAGHUPATHY	Joint Secretary Ministry of Steel, India
Gérard RAMIREZ	Delegué FO chez Usinor/Sacilor Fédération Confédérée FO de la Métallurgie France
Andrzej RECZYNSKI	President BIPROSTAL SA Krakow, Poland
Michel RENAUX	Secrétaire national de la Centrale des Métallurgistes, F.G.T.B. Sect. nat. Belgique
Gillepsie ROBERTSON	Senior Vice President Regional Affairs Europe, Middle East and Africa, Australian BHP, London, United Kingdom
Mike ROBERTSON	Deputy Director Trade Policy Bureau, Department of Foreign Affairs and International Trade, Canada
Anthony ROSSITER	Head, International Metals Team Department of Trade and Industry EAM SA, United Kingdom
Armand SADLER	Head, Economic Studies Trade Arbed SA, Luxembourg
Salvatore SALERNO	Head of Unit Commission of the European Union, Belgium
Sarquis SARQUIS	Coordinator of OECD Issues Division of Finance and Development Policies, Ministry of External Relations, Brazil
Tetsuya SATO	Director Iron and Steel Administration Division Basic Industries Bureau - MITI, Japan

Roger SCHAGRIN	President, Schagrin Associates United States
Giuseppe SCHINAIA	Fonctionnaire Administratif Direction de la production industrielle Ministère de l'Industrie, Italie
Dines SCHMIDT NIELSEN	Chief Economist Centralorganisationen af Industriiansatte, Denmark
Bénédicte SEGUI	Statistical Assistant, Sectoral Issues Division DSTI, OECD
Arnaldo SERRAO	Coordinator of Steel Ministry of Mines and Energy, Brazil
Dimitris SERRELIS	Counsellor Permanent Delegation of Greece to the OECD
John SHEEHAN	Assistant to the President United Steel Workers of American, United States
Li SHIJUN	Deputy Director of Science and Technology Dept., Ministry of Metallurgical Industry People's Republic of China
Toh Huan SHIN	General Manager Southern Steel Berhad, Malaysia
André SIGNORA	Usinor Sacilor Chief Economist, Paris, France
Svetlana SMIRNOVA	Head of foreign and domestic statistics, Committee of metallurgy Russian Federation
Barry SOLARZ	Vice President, Tax and Trade American Iron & Steel Institute, United States
Joseph SPETRINI	Department Assistant Secretary for AD/CVD Department of Commerce, United States
Fritz STENEBERG	Research Officer Swedish National Board of Trade, Sweden
Prakmard SUWANASING	Director of Metallurgy Division Department of Mineral Resources Ministry of Industry, Thailand

Makoto TANIGUCHI	Deputy Secretary General OECD
Shigeto TANIZAWA	Chief Manager Export Administration Section Sales Administration Department Kawasaki Steel Corporation, Japan
Satid THERDKIATTIKUL	Metallurgical Engineer, Metallurgy Division, Department of Mineral Resources, Ministry of Industry, Thailand
Trond TJEMSLAND	Market Analyst Elkem AS, Oslo, Norway
Hiramoto TODA	Managing Director The Japan Iron and Steel Federation, Japan
Anthony TRICKETT	General Manager, Economic Affairs IISI, Brussels, Belgium
Ming Shen TSENG	Director of Research Division III Taiwan Institute of Economic Research Chinese Taipei
Istvan VARGA	Chief Advisor Ministry of Industry and Trade, Hungary
Charles VERRILL	Partner of Wiley, Rein & Fielding United States
Patricio VICTORIANO	First Secretary Embassy of Chile in Paris, France
Yang XIAONING	Deputy Director of Metallurgical Economy, Development Research Center People's Republic of China
Kazutaka YASUMI	General Manager, European Office The Japan Iron and Steel Federation Brussels, Belgium
Maw-Sheng YEH	Standing Director of the China Steel Corporation (CSC), Labor Union Chinese Taipei
Yang ZUNQING	Deputy Director, Foreign Affairs Department, Ministry of Metallurgical Industry People's Republic of China