CHAPTER 6

New Players in the Global Steel Market

Introduction

In light of the instability caused by Russia's emergence as a major exporter in recent years, U.S. steel workers and producers have expressed concern about new players that may begin to compete internationally. Three of these players, China, India, and Ukraine, have raised the most concerns as potential threats to the global steel market's stability, particularly given the continued aid of their respective governments.

Although **China** is the world's largest crude steel producer, its export potential may not be as great as overall production might suggest, due to its relatively small number of efficient producers. However, the Chinese government is undertaking a concerted effort to upgrade key producers. Government planned and supported investment projects will improve production techniques and product quality. And a government-directed consolidation of the industry will concentrate steel production around a small number of large industrial conglomerates. The Chinese government intendes for these producers to enjoy the full benefits of economies of scale and diversified business operations. If the domestic market cannot absorb their production, they could become more significant exporters, and continued government support raises concerns about the potential for unfair trade. With China's accession to the World Trade Organization (WTO), the United States will have available several key new mechanisms for addressing trade concerns, including a special safeguards mechanism for import surges and increased disciplines for subsidies.

Ukraine has significant potential for exporting large volumes of steel in the near term. While Ukraine was not a major player in the 1998 steel crisis, prior to and since 1998 Ukraine has exported large volumes of steel to the United States. Most of Ukraine's steel production facilities remain government-owned, and the government continues to focus on steel exports as a way of revitalizing the formerly state-controlled economy. The government's involvement in the steel sector increases the potential for unfair trade in international steel markets.

India could also become a substantial exporter. Over the past few years, domestic demand in India has greatly decreased, increasing the need for Indian steel producers to export their products. In addition, government subsidization has created a steel sector that has a large amount of overcapacity. Given the government's involvement in the steel sector, the possibility of unfairly traded steel entering the global market rises as India increases its exports.

The Chinese Steel Industry

Labor and Industry Concerns. China has never been a major steel exporter and did not play a meaningful role in the surge of steel imports into the United States in 1998. However, several factors are seen as making China a legitimate medium- to long-term concern for steel workers and producers in many countries, including the United States.[1]

- Production levels that have more than doubled in the last ten years, making China the world's largest producer of crude steel.
- Large-scale (government-planned) investments to introduce new technologies and improve productivity.
- An array of nontariff barriers to restrict steel imports and an import substitution strategy targeting finished steel products.
- Two recent U.S. antidumping investigations involving Chinese steel producers, although involving relatively small amounts of steel.

U.S. steel workers and producers see China's government support and tremendous steelmaking capacity as enabling Chinese steel producers to enter international markets in a broad range of products, displacing competitors with ever increasing volumes. However, in the short term, China faces some major structural impediments, and in the medium to long-term, it will for the first time face the rigors of WTO compliance and review.

Structural Impediments. China does not yet pose the export threat that its size might otherwise suggest, for reasons that include the following:

- China is a large and growing consumer of steel products, making it a net importer.
- China is struggling to fix a myriad of structural and performance problems that threaten its steel industry: industry fragmentation, poor product quality, low labor productivity, an overly narrow product range (concentrated at the low, value-added end of the market), growing domestic demand and supply imbalances and obsolete plant and equipment. The industry remains grossly inefficient, technologically backward and unable to meet adequately the ever-changing needs of the market.

These problems are largely due to China's unfinished economic and institutional reforms (particularly in the case of the large state-owned enterprises operating in China's heavy industrial sector)[2] and the government's need to consider non-economic objectives (*e.g.*, employment) in its restructuring efforts. Although these problems remain in certain sectors, China has made great strides toward overall economic reform, *e.g.*, agriculture, trade and the development of industry and services outside of the state-owned enterprise sector.

China's WTO Accession. Whether or not Chinese steel producers evolve into world-class competitors, China's pending WTO accession dramatically reduces their ability to benefit from market distorting practices. Accession will curtail a number of tactics currently employed by China to restrict steel imports and greatly narrow China's ability to subsidize future steel exports. As a result of WTO accession, China will do the following:

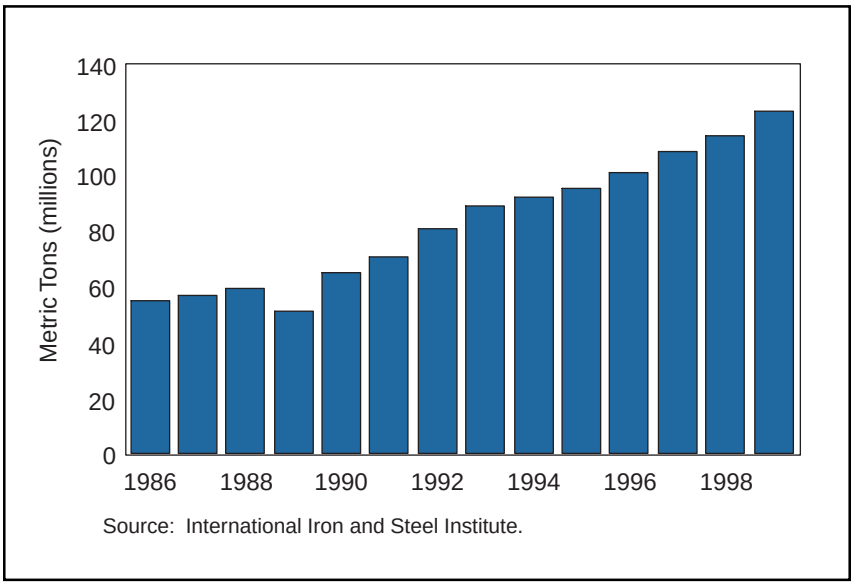
- Reduce tariffs on steel imports from an average 10.3 percent to 6.1 percent, with many of the largest reductions involving high-end specialty steel products.
- Eliminate various nontariff barriers, including import substitution measures, import quotas and nonautomatic import licensing and import registration requirements.
- Eliminate designated state trading in the steel industry.
- Eliminate its prohibition on foreign companies distributing imported steel products in China or providing related distribution services.

- Be subject to strong subsidy disciplines under the WTO Agreement on Subsidies and Countervailing Measures, including elimination of export subsidies and import substitution subsidies.
- Remain subject to a special, nonmarket economy methodology for counteracting dumping for at least fifteen years.
- Be subject to a special, China-specific safeguard mechanism to block import surges for twelve years.

Furthermore, exposure to international competition could drive a rationalization of the Chinese steel industry. Already the government's investment strategy seems to recognize that the Chinese steel industry must go through a period of serious consolidation to prepare it for the competition that will be unleashed by its WTO membership.

China's Export Potential

China today is the world's largest producer of crude steel, with annual output just over 120 million metric tons (MT) in 1999.[3] China achieved the top spot in 1996, after having more than doubled its annual output in just ten years (*Chart 6-1*). China's 1999 crude steel output places it ahead of the United States (97 million MT) and Japan (94 million MT), the world's second and third largest crude steel producers, respectively.[4]



6-1. Crude Steel Output, China

In spite of its tremendous overall capacity, current structural and performance problems and growing domestic steel demand (sufficient to make China a net importer of steel) suggest that China's export potential is limited in the short term, and uncertain in the medium to long term.

Old Equipment and Outmoded Production Techniques

China's steel industry comprises a small number of large and medium-sized firms and thousands of small-scale operations.[5] The largest producers are all state-owned enterprises (*see box next page*).[6] Whether in the steel or any other sector, state-owned enterprises in China generally suffer from many of the same problems—problems the Chinese government is trying to address. Corporate governance remains weak; budget constraints are not sufficiently hard; large state-owned enterprises carry significant social welfare burdens; financial and cost accounting standards remain lax; and decentralization has resulted in local and central government policies that often conflict. These issues are at the root of many of the structural and performance problems besetting the steel industry (*see second box next page*).[7]

Fragmentation. In 1998, fifty steel firms in China produced more than 500,000 MT of crude steel; thirty-four firms produced more than 1 million MT; and four firms produced more than 5 million MT. None produced more than 10 million MT. The four largest firms account for more than 30 percent of total annual steel output, and the top sixty-seven steel producers now account for close to 90 percent of China's annual crude steel output.[8]

China's Big Four

Baoshan, Anshan, Shougang, and Wuhan are China's four largest steel producers: Baoshan is described by many as China's largest, most modern and efficient steel producer, with output of close to 10 million MT of crude steel per year. It is said that Baoshan's core steel operations benefit from a skilled and productive workforce on par with world-class producers and from modern management and accounting systems. In 1998, Baoshan reported sales in excess of $4 billion and net profit close to $300 million. Exports accounted for approximately 20 percent of total finished steel output. Baoshan exports hot- and cold-rolled flat products to Asia and North America. In terms of export potential, Baoshan has a distinct geographic advantage over most other large Chinese steel companies given its ready access to nearby port facilities. Baoshan has China's most advanced steel product line, with annual capacity of 400,000 MT of tinplate and coils, 325,000 MT of silicon sheet and coils, 160,000 MT of color sheet, 2.6 million MT of cold-rolled sheet and coils, 2.8 million MT of hot-rolled plate and coils, 2.2 million MT of semi-finished billets and 500,000 MT of pipe and tube products.

Anshan, Shougang and Wuhan constitute a second tier of companies from an organizational, managerial and performance standpoint. These three are much older than Baoshan and still carry the legacies of state planning. All three are financially weak and in need of significant restructuring, retooling and reorientation before they can achieve Baoshan's level of performance. Anshan and Wuhan produce a range of steel products, *e.g.,* sections and plate, and hot-rolled and cold-rolled coil. Shougang's product line consists mostly of sections, wire rod and plate. All three export, primarily to regional Asian markets.

The Root of the Problem

The structure and performance problems that confront the steel industry stem from the incomplete nature of China's economic reforms to date. There continues to be a lack of sufficient separation between the government (at all levels) and state-owned enterprise management. Corporatization has done little to improve corporate governance at large state-owned enterprises, in part because few large state-owned enterprises have converted to limited liability companies, and those that have remain wholly or majority state-owned. The social, legal and institutional boundaries of large state-owned enterprises remain unclear. Large state-owned enterprises continue to shoulder tremendous social welfare burdens, having to finance the cost of pensions, schools, housing, entertainment, and medical and health benefits. Lines of authority, responsibility and accountability are not well defined. As a result, managers, ministries, and governments at all levels view state-owned enterprise income and assets as their own and state-owned enterprise expenses and liabilities as someone else's problem.

In this environment, state-owned enterprises cannot function as value-adding, profit-maximizing firms. Instead, they serve as vehicles for rent-seeking behavior and for providing social welfare services. Not surprisingly, state-owned enterprise liabilities have increased dramatically along with insolvencies. Nevertheless, the troubled, money-losing state-owned enterprise sector continues to use a disproportionate share of China's investment resources.

Bank loans have kept state-owned enterprises alive. Four large, state-owned banks dominate lending activity. Many of the loans are not being paid back. And because these banks are either unable or unwilling to raise interest rates or lend to more credit worthy firms, bad debts have grown to the point where they collectively are insolvent.

Technological Backwardness. China's steel production capacity—now greater than 140 million MT[9]—is based on outdated steelmaking technology and equipment. Approximately one-third of capacity was built with equipment that predates the 1970s, with some equipment still in use that predates the 1950s. About one-half of capacity was built with equipment from the early 1980s.[10] Automation and computerization of the production process is sorely lacking, as are adequate quality control systems.

As a result, many Chinese steel firms contribute significantly to environmental pollution. China now recognizes environmental pollution as a huge economic and social problem that must be controlled in order to sustain the country's overall economic development.[11] Poor product quality has also been a significant barrier to the steel industry's ability to enter many international markets.[12]

Millions of Employees With Nowhere to Go

An oversized and unproductive workforce compounds the efficiency and technological problems facing China's steel industry. To put the labor problem in perspective, consider that one of China's largest steel producers, Shougang, currently employs as many steel workers as all U.S. steel companies combined.[13] Roughly 1 million to 2 million people are actually engaged in iron or steel production in China.[14] Thus, labor productivity in China's steel industry—conservatively measured on the basis of 120 million MT of crude steel output—is between 60 MT and 120 MT per worker per year. In contrast, U.S. labor productivity exceeds 600 MT per worker per year.[15] Baoshan is the exception, where workers reportedly average 650 MT per year.[16]

In 1998, the government set a goal of reducing the number of steel workers from 1.3 million to 1 million, with targets for 2000 and 2005 of 800,000 and 600,000, respectively.[17] It remains to be seen, however, whether such goals are realistic from a socioeconomic standpoint. China's steel workers tend to be concentrated at large state-owned enterprises. Because housing and pension benefits at these state-owned enterprises generally are not portable, the loss of a job can translate directly into the loss of one's home and accumulated pension benefits.

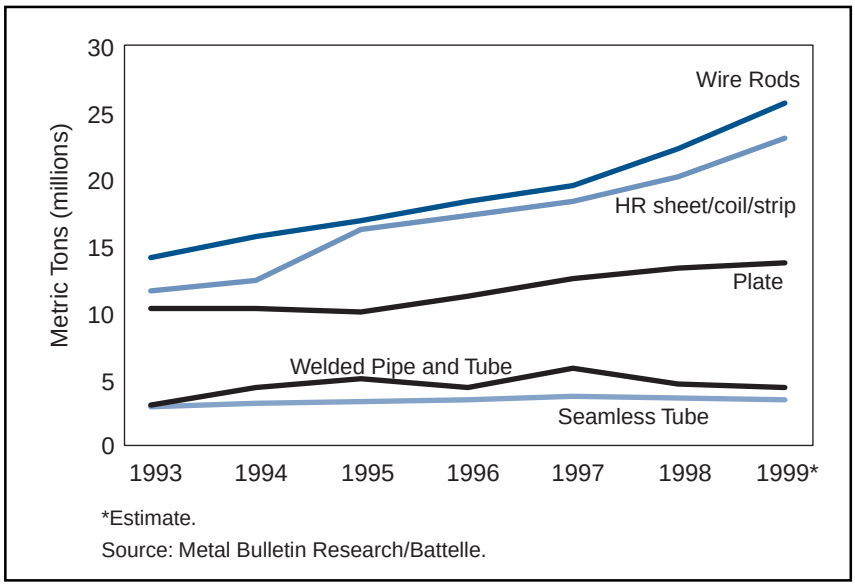
The relatively large concentration of workers at steel firms also means that the impact of layoffs on the local economy can be significant. In many cases, steel producers are the primary employer in a region and the primary source of tax revenue for local governments. For these reasons, local governments often oppose layoffs.

Nevertheless, steel makers are shedding labor at a relatively rapid rate. The government's initial goal of reducing the industry workforce by 300,000 workers in 1998 reportedly was met.[18] However, for labor productivity in China's steel industry to reach international levels, steel producers will have to go much farther. A limit to how quickly this can happen is the economy's ability to absorb displaced steel workers when many other sectors are also restructuring. In 1998, 12 million workers were laid off throughout China, and 7.5 million more in the first half of 1999.[19] The government's ability to manage the socioeconomic problems of worker dislocation and re-employment will no doubt determine in large part the extent and speed with which steel industry restructuring takes place, and ultimately, the ability of steel producers to compete abroad.[20]

Wrong Product Mix

Product Mix Imbalance. Despite large annual crude steel and finished product output, China's steel industry has not been able to control a growing imbalance between market demand and supply. Lower-value-added products (or "low-end products"), *e.g.*, rails, bars, rods, pipes and tubes, wire rod, sections and plate, account for about 70 percent of total finished steel output.[21] China's capacity in these areas increased dramatically in the late 1980s and early 1990s in response to chronic shortages and a construction boom. Since then, demand for low-end products has slowed, while demand for higher value-

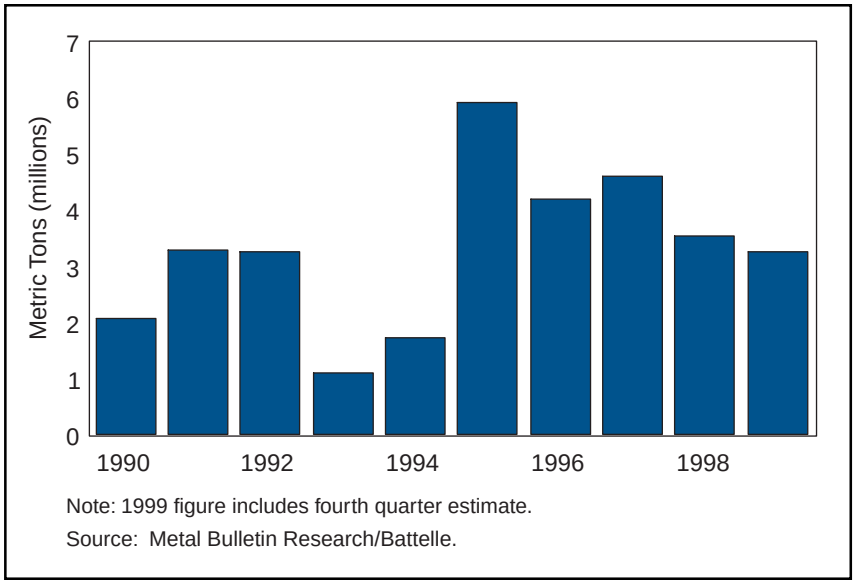
added products (or "high-end products"), *e.g.*, hot-rolled and cold-rolled sheet, galvanized sheet, stainless steel and tinplate, has increased. Producers have not adjusted to this shift in market demand and continue to churn out low-end products in increasing volumes *(Chart 6-2)*.



6-2. Finished Steel Output by Product Type, China (1993–1999)

As a result of the government's inability to stem the flow of low-end steel, there has been a substantial increase in inventories. By some estimates, the current rate of oversupply exceeds 10 million MT per year,[22] and accumulated inventories reached 30 million MT at the end of 1999.[23] This has led to serious cash flow problems for firms, and some have resorted to paying their bills in kind through the exchange of steel for raw materials. Such payments may represent as much as 30 percent of total industry sales.[24]

Government Import Substitution Goals. This imbalance has given rise to what the Chinese government views as China's excessive dependence on imports of high-end products. Total steel imports grew from 12 million MT in 1998 (about 10 percent of consumption) to an estimated 15 million MT in 1999 (about 12 percent of consumption). Nearly 70 percent of steel imports in 1999 were high-end flat products including hot-rolled and cold-rolled sheet, stainless steel, galvanized sheet and tinplate. [25] If Chinese producers collectively are unable to determine the right product mix to satisfy demand at home, it is unclear how they will do so to satisfy demand abroad.



6-3. Chinese Finished Steel Product Exports (1990–1999)

Historically, Not a Big Exporter

Historically, China has never been and is not now a steel exporter of significance, as the Chinese have focused their attention on the domestic market *(Chart 6-3)*. Given average annual finished steel production of 99 million MT during 1996–1998[26] and average exports of 4.1 million MT per year, China consumes about 96 percent of its finished steel output. Per capita steel consumption is low by international standards, but it is growing, having increased from 60 kg in 1990 to approximately

100 kg at present. Per capita consumption is expected to continue growing at this pace.[27] Current total consumption exceeds 125 million MT per year. With such a large and growing steel market, China not only absorbs most of its own production, but is a net importer.

Most of the finished steel production that China exports goes to regional markets in Asia. The regional nature of China's steel exports reflects the high weight-to-value ratio of much of its steel output and the fact that China does not yet consistently meet international product standards, particularly for high-end steel. In large part because of the Asian financial crisis, China's steel exports dropped approximately 23 percent between 1997 and 1998 (roughly 1 million MT in absolute terms), due to reductions in shipments to what had been China's largest export markets, Korea and Japan.[28]

Impact on the United States. Falling exports to Asia appear to have resulted in some trade diversion to the United States, but not to the extent that China played a significant role in the U.S. steel crisis in 1998. The United States imported 434,000 MT of steel mill products from China in 1996; 433,000 MT in 1997; and 574,000 MT in 1998. In contrast, steel mill imports from Japan rose from 2.3 million MT in 1997 to 6.1 million MT in 1998, and imports from Russia rose from 3 million MT in 1997 to almost 5 million MT in 1998. In 1999, steel mill imports from China increased to approximately 700,000 MT,[29] possibly due to the effect of U.S. antidumping orders on imports of hot-rolled steel from Japan, Brazil, and Russia.

U.S. Antidumping Cases. Chinese steel producers have been subject to a limited number of U.S. antidumping actions covering small volumes of trade. A 1997 suspension agreement on carbon, cut-to-length plate settled a case involving Shougang, Wuhan and Anshan and approximately 271,000 MT of trade (about 19 percent of total U.S. carbon cut-to-length plate imports). A 1999 investigation of cold-rolled flat-rolled carbon-quality steel products involved Baoshan and approximately 125,000 MT of trade (about 4 percent of total U.S. cold-rolled flat-rolled carbon-quality steel imports).[30] This investigation resulted in an affirmative finding of dumping, but a negative injury finding by the U.S. International Trade Commission.

China's Industrial Development Plans

China's serious structural and performance problems and historically low export volumes might make China's emergence as a major steel exporter seem unlikely. However, because of the Chinese government's industrial development plans for the steel industry, there remains concern. China's leaders have historically viewed a modern and efficient steel industry as a fundamental basis for sustainable economic development. For China's current economic reformers, a strong steel industry is an indispensable part of China's overall effort to meet growing demand for steel products in strategic, steel-intensive sectors such as transportation and energy infrastructure, automotive manufacturing, shipbuilding, and other so-called "pillar industries" that will form the backbone of China's rapidly growing economy.[31]

The government's efforts to strengthen the industry are focused on consolidation and modernization:

- **Consolidation** will concentrate production around the big four producers and eliminate the inefficiencies and wasted resources of small-scale production.
- **Modernization** through plant and equipment upgrades and improved industrywide production methods and management techniques will make steel makers more competitive and more responsive to market demands. Modernization also encompasses efforts to give steel makers a fresh start by reducing their debt burden with debt-equity swaps and to develop China's top producers into industrial conglomerates that can draw profits from diverse business operations.

China's four largest steel producers—Baoshan, Wuhan, Anshan, and Shougang—are at the forefront of this strategic development effort. Through plant and equipment upgrades and improved production methods, China's industrial planners hope to accomplish four things:

- Increase the rate of continuous casting to 100 percent.
- Automate and computerize production lines.
- Increase the average capacity of blast and steelmaking furnaces.
- Make greater use of secondary metallurgical processes.

The goal is to increase the supply of domestic substitutes for higher-end products that China imports in relatively large volumes, *e.g.*, cold-rolled sheet for automotive applications, stainless steel and oil country tubular goods.

Modernization

The Chinese government realizes that for China's steel industry to succeed in the twenty-first century, surviving steel makers must behave more like profit-maximizing firms, with respect to the types and volume of products they sell, the terms and conditions of sale and their reactions to changes in revenue and cost. Domestic steel makers must in general learn modern production and managerial techniques and become proficient at operating in a market environment.

Decentralization. The government is unwilling at this time to fully privatize the steel industry. Instead it has opted for progressive decentralization of control over the steel industry. Consistent with its general approach to reform in the state-owned enterprise sector, the central government continues to oversee large state-owned enterprises, while allowing administrative control over smaller producers to devolve to provincial and local governments. In 1998, the central government took several steps toward decentralization:

- Downgrading the Ministry of Metallurgical Industries to a state bureau, which is now known as the State Administration of Metallurgical Industries (SAMI) and is part of the State Economic and Trade Commission (SETC).[32]
- Eliminating SAMI's investment oversight function and its authority to formulate production and material distribution plans for specific enterprises.
- Liberalizing internal distribution and export trading rights in steel. SAMI now performs more of a pure industrial policy function, for example, determining which product areas need support. [33]

Consistent with these industry-specific efforts, and as part of broader reform plans *(see box next page)*,[34] the government is working to ensure that steel producers face harder budget constraints, pay greater attention to cost and profit considerations and become generally more attuned to the market. Through the actual and threatened removal of managers of financially troubled state-owned enterprises, and a reduction in overall assistance and support, the government is attempting to send a signal that steel producers must learn the ways and rules of the market. However, change is not coming easily, and the legacy and effects of state planning are proving difficult to erase. For example, it appears that the new bank lending policies do not apply to large state-owned enterprises.[35]

Government-Planned Investment

The government recently announced that $6 billion will be spent over the next few years to upgrade and transform the steel industry, with the hope of ensuring its international competitiveness when China enters the WTO. Baoshan, Wuhan, Anshan, and Shougang head the list of steel producers slated to benefit from this assistance. Nearly $3.4 billion will be in the form of low-interest loans. It is not clear whether this amount represents the volume of low interest loans or, alternatively, the reduction in interest payments that the government will cover.[36] Furthermore, the central government—in administering such key investment projects—has in the past directed that local governments give priority to key projects in terms of land use, transport, raw material, equipment, water and power supplies.[37]

Current Reform Efforts in the State-Owned Enterprise and Banking Sectors

Past reform efforts have never been quite enough, and Chinese analysts sometimes refer to "a bowl of half-cooked rice" in describing reforms to date of state-owned enterprises. However, many observers believe that the government now understands fully the threat to the economy that the banking and state-owned enterprises sectors pose—particularly in a slow growth environment—and is taking significant steps to tackle the problems.

Banks are now subject to higher capital adequacy ratios and stricter accounting and loan classification standards, and loan officers are being held personally (and permanently) liable for new loans that go bad. The government is also working to enforce commercial lending practices at the local level, to prevent local government pressure for soft loans from undermining the government's reform efforts. These new policies are designed to set up banks as true commercial lenders and limit policy lending to four policy banks.

The result has been a significant slowdown in bank lending to state-owned enterprises and a hardening of the budget constraints they face. Together with these new bank lending policies, debt-equity swaps are being used to clean up state-owned enterprise and bank balance sheets, and give them a fresh start in remaking themselves into market-oriented, profit-maximizing operations.

Many small and medium-sized state-owned enterprises are being liquidated or privatized. Many managers and entrepreneurs see increasing opportunities in China's rapidly growing private sector, which accounts for anywhere from 10 percent to 30 percent of GDP. Reform-minded provincial governments want to reduce or eliminate what they see as a net drain on their scarce resources and finances. The privatization of many small and medium-sized state-owned enterprises is real in the sense that it involves either (1) the outright sale of whole state-owned enterprises or their assets to individuals or (2) the "appropriation" of assets by managers and/or workers for their own private use, much like the spontaneous privatizations that occurred in Eastern Europe and Russia.

Although the central government appears determined in its latest reform efforts, some policy inconsistencies and contradictions may still dilute the latest round of reform efforts. This is particularly true for large state-owned enterprises, which the government intends to operate in strategic industries such as autos, telecom, steel, machine building, energy, aerospace, petrochemicals, computers, and electronics. For example, the new lending practices apply only to small- and medium-sized state-owned enterprises, not to large ones. The government's 1998–1999 infrastructure spending program—designed to buoy state-owned enterprises and boost aggregate demand—was run through the banks. Using banks and state-owned enterprises in this manner necessarily interferes with efforts to commercialize the banks and reduce *ad hoc* government intervention in enterprise affairs.

Government-planned investment accounts for a large share of the steel sector's total investment in fixed assets. The nature of these investments remains a concern, despite ongoing efforts to improve the efficiency with which investment funds are allocated and used in China. Both the allocation and use of investment funds are based in large part on nonmarket signals.[38] The technological upgrading and transformation of China's steel industry is predicated, in large part, on investment plans formulated by the State Development Planning Commission (SDPC), the SETC, provincial governments and the largest state-owned enterprises. The investment plan for steel must be approved by the State Council and is part of China's broader five-year plan for the country.[39] China's ninth five-year plan ends this year, and the tenth begins in 2001.

In its five-year plans, China decides well in advance on the aggregate, economywide amount of investment that will be made over the period and the allocations to specific industries and sectors. For example, in the ninth five-year plan (1996–2000), the central government decided that a total of $1.1 trillion would be invested, with a little over half of that total going to seven major industrial sectors: primary industries

(including steel), energy, electronics, communications and transportation, petrochemicals, automobile manufacturing and machine building.[40] These investments are financed for the most part with state bank lending supported by the savings of China's workers and farmers.

Effect on China's Big Four

Under China's five-year plans, its four largest steel producers have undergone technological upgrading and transformation.

Baoshan represents the best example of explicit government support for strategic development purposes. Baoshan was modeled after Nippon Steel's Kimitsu mill. Construction began in the late 1970s and production commenced in 1985. Baoshan is, by design, the largest single Chinese steel supplier to China's automotive, aviation, petroleum and shipbuilding industries, and is one of China's largest manufacturing companies. Baoshan is the government's primary steel import substitution vehicle.[41] As a result, China's ninth five-year plan focused on increasing Baoshan's capacity to produce higher-value-added flat products, which China now imports in relatively large volumes. These products include cold-rolled sheet for automotive applications, stainless steel, high-tensile strength wire rod and tinplate[42] *(see box)*.[43]

Wuhan shut down its last open-hearth furnace and commissioned two new basic oxygen furnaces at the end of 1998.[44] Two continuous casters came on line in June 1999. Output from these casters will feed the production of value-added steel products including high-strength, prestressed concrete reinforcement rod and high-carbon spring steel for automotive applications. Two new bloom casters will raise Wuhan's continuous casting ratio to 100 percent. Substantial investment in Wuhan's downstream operations will upgrade flat steel production, including both hot-rolled and cold-rolled coil. Renovation of a 2,800-millimeter (mm) reversing mill is under way in order to produce wider and better plate to supply a growing number of large-scale bridge construction projects. Wuhan has also upgraded its existing hot-rolled and plate mills to improve overall finishing quality.[45] Cold-rolled sheet capacity has also increased, with testing begun in 1998 for the production of thin, cold-rolled sheet for automotive applications.[46]

Sino-Foreign Joint Ventures

Technological upgrading and transformation is also taking place on a limited basis through Sino-foreign joint ventures. For example, in 1997, the SDPC approved a joint venture between Shanghai Pudong (which Baoshan absorbed in 1998) and Krupp Thyssen Nirosta (KTN) of Germany, the largest producer of cold-rolled stainless steel in the world. KTN holds a 60 percent equity stake in the joint venture (called Shanghai Krupp Stainless), with Shanghai Pudong holding the remaining 40 percent. Financing of the initial $300 million investment was shared by KTN, the International Finance Corporation of the World Bank, a German bank, and Shanghai Pudong.

Anshan's modernization efforts have lagged behind those of Baoshan and Wuhan. Nevertheless, Anshan has recently picked up the pace, focusing on increasing its continuous casting ratio to 100 percent by this year and increasing the share of output accounted for by processing beyond the hot-rolled stage. Several new continuous slab and bloom casters have been installed, a 1,780-mm wide hot strip mill is being constructed, and existing hot-rolled and cold-rolled mills are being upgraded and expanded.[47]

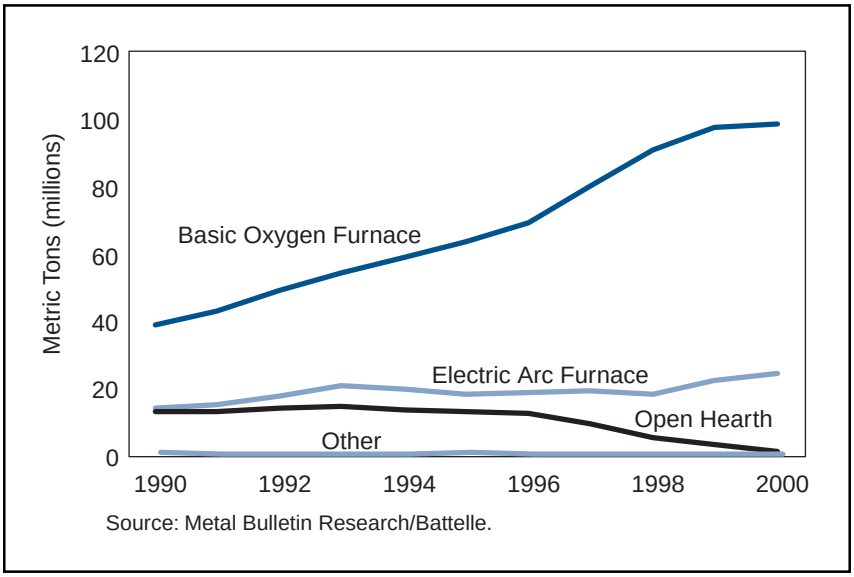
Shougang, located on the outskirts of Beijing, has made pollution abatement a top priority and has steered recent investment under the ninth five-year plan toward slag processing and the reduction of air-borne pollutants. Shougang primarily produces bar; plate; welded and seamless pipe; wire rod; and light, medium and heavy sections, but it is considering a move into higher value-added flat products. Shougang is currently installing a new carbon hot-rolled coil line with an annual capacity of 4 million MT to meet expected demand from China's automotive sector. In 1999, Shougang installed a ladle refining furnace for

wire rod production with an annual capacity of 700,000 MT, and plans are in place for the installation of additional, secondary metallurgy furnaces.[48]

Old Technology Phase-Out. On an industrywide basis, China intends to phase out the use of open-hearth furnaces by the end of 2001.[49] The share of total output produced with open-hearth furnaces has dropped from 20 percent in 1990 (13.2 million MT) to an estimated 1 percent in 2000 (1.3 million MT) *(Chart 6-4)*.

By relying exclusively on basic oxygen and electric arc furnaces, the government hopes to increase throughput and furnace yields and improve hot metal quality. The rate of continuous casting is also increasing, which will reduce handling and reheating costs, and increase throughput and yield. The share of output produced with continuous casting has gone from just over 20 percent in 1990 (14.8 million MT), to an estimated 70 percent in 1999 (85.8 million MT) *(Chart 6-5)*.[50] To a limited extent, the government is also trying to increase the industry's reliance on secondary metallurgy and automated and computerized controls to further improve metal and finished product quality.

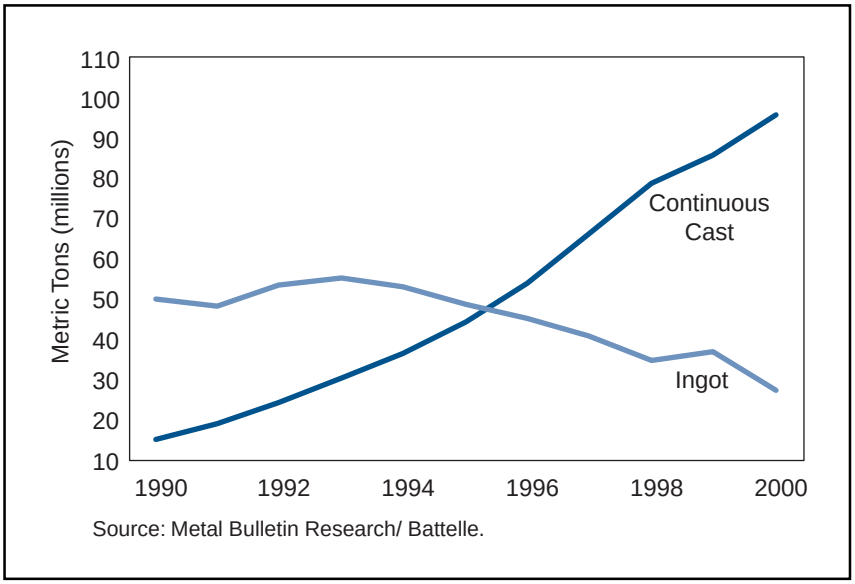
In general, the capital stock of the medium-sized and large producers that survive consolidation will need wholesale upgrading or replacement. Given practical and financial limitations, the government has adopted a piecemeal approach, targeting what it views as strategically important products, producers and production methods.



6-4. Raw Steel Production by Furnace Type, China

Business Diversification: The Korean Chaebol Model

Company diversification is another element of the government's industrial plan to develop flexible, versatile producers that can survive the international steel market's worst conditions by having multiple profit centers independent of their core steel operations.[51] According to an OECD report, "much of the current consolidation drive is fueled almost exclusively by size considerations; it rests on the assumption that large corporate groups, combining



6-5. Steel Production by Casting Process, China

huge capacity, diversified production lines and large internal financial resources (*i.e.,* national champions) are needed to match foreign competition."[52] The central government's belief that bigger is better for state-owned enterprises stems in part from the impression that Korea's chaebol contributed significantly to Korea's rapid growth, development and role in world industrial production and trade. Chinese officials are also aware of the structural weaknesses and institutional inflexibility in the Korean system (which the Asian financial crisis laid bare). Nevertheless, they intend to take the best from the Korean model and build a better model with Chinese characteristics *(see box)*.[53] They seek a modern enterprise and banking system with the resources and strength to compete successfully in world markets, but without the institutional and structural weaknesses that would leave China unable to cope with another Asian financial crisis.

Building a Better Chaebol?

Baoshan is an example of the type of large industrial conglomerate that the government wants to build. Baoshan has thirty-seven wholly owned subsidiaries involved in trade, finance, information technology, engineering, computer system administration, transportation and shipping and construction. It recently entered into a joint-venture agreement with Dongbei University Software Group to establish the Baoshan Dongda Information Industry Group, the largest software company in China. Dongda has future plans to move into software development, systems integration and the production of digital medical equipment.

Borrowing only the good aspects of the Korean model may be much more difficult in practice than in principle, given the current problems in the state-owned enterprise and banking sectors and China's unfinished reforms. Moreover, China's industrial planners may be placing undue importance on the role of large firms, perhaps to the detriment of China's overall growth and development. Other Asian economies have successfully industrialized by promoting the growth and development of a private sector made up of small and medium-sized enterprises.[54]

The ultimate effect of these diversification efforts on China's domestic steel market and its steel producers' competitiveness is unclear. In discussing China's move toward the consolidation of state-owned enterprises, the Organization for Economic Cooperation and Development (OECD) points out that "recent international experience however has shown that such a course may bear negative results in the medium term … such holdings [groups] often stifle the development of competition." [55] However, some observers have a more basic concern that current organizational and managerial weaknesses in the state-owned enterprise sector will preclude any gains from diversification. [56]

Challenges, Obstacles, and Competing Interests

The government's mergers and acquisitions strategy walks a fine line between using the strong to help the weak and weakening China's strongest companies. Many of the steel company mergers in China have involved the forced marriage of financially healthy and unhealthy firms, where little or no gain is realized by the financially healthier firm. While these types of rationalization mergers allow the government to temporarily avoid the socioeconomic consequences of more direct shutdowns and large-scale layoffs, they clearly work against the government's long-term efficiency goals.

The 1998 merger of Baoshan, Shanghai Meishan Group and Shanghai Metallurgical Holding Company (SMHC) is a case in point. Although the resulting industrial conglomerate now accounts for 20 percent of the fixed assets in the steel industry, bigger in this case is not necessarily better. The merger saddled Baoshan—China's largest, most modern, efficient and profitable producer—with outdated equipment, additional debts and significant pension obligations. The addition of SMHC alone increased Baoshan's payroll from the 11,000 employed directly at Baoshan's steelworks to over 131,000 workers. [57] Expressing concerns that the merger has undermined Baoshan's long-term viability, Standard and Poor's downgraded Baoshan's debt rating to junk-bond level.[58]

Notwithstanding the negative impact that mergers and acquisitions may have on the operations of China's large steel makers, the broad macroeconomic goal of consolidation is to reduce the tremendous environmental pollution and waste of economic resources that result from the "backyard" operation of thousands of small-scale steel operations. To eliminate this waste, the government—through a combination of mergers, acquisitions and mill shutdowns over the next twelve to fifteen years—wants to concentrate production around a small number of large industrial conglomerates that will enjoy the full benefits of economies of scale and diversified business operations. In 1999, the SETC scheduled more than 2,300 small-scale iron and steel plants for elimination.[59]

Results of Consolidation Efforts

Because industry consolidation efforts have been under way for a relatively short period of time, there is little data on the results. A review of available data indicates that the government's efforts have had only limited success to date.

Shutdowns. By November 1999, 550 small iron and steel plants apparently had been shut down, eliminating 840,000 MT of steel production.[60] Although this number of shutdowns appears significant, the production volume associated with these plants is less than 1 percent of industrywide production.

Bankruptcies. Bankruptcies appear to be occurring on an even smaller scale. While this data is also sketchy, eighteen bankruptcies apparently occurred in 1998 and perhaps a handful more in 1999.[61]

Mergers and Acquisitions. At the end of 1999, media reports indicated that SAMI had selected seven financially troubled companies for merger in the coming year, in addition to forty-six similar mergers that occurred last year.[62]

Obstacles

The relatively slow progress in shutting down mills may be attributable to the fact that China's steel market, in some sense, must overcome many of the same problems that characterize the world steel market. First, many of the mills that the government wants to shut down are operating for noneconomic reasons, with the support of local and provincial governments. Second, plant closures are costly, particularly in terms of the bad debt that in many cases must be written off. One strategy used to deal with this problem is debt-for-equity swaps.

Local and Provincial Resistance. To shut down these mills, the government's plan is to cut them off from all bank credit and other resources needed for production.[63] Such an approach will likely work where the local and provincial governments are in agreement. But the central government often lacks effective control at the local and provincial level over these mills and the resources they use.[64] Therefore, the government's approach may not work where local or provincial officials oppose shutdowns because of concerns about the public finance and socioeconomic consequences. Moreover, where local or provincial governments have opposed a shutdown, the central government must also block future market re-entry.

Debt-Equity Swaps. The government has recently implemented a debt-for-equity swap program to give heavily indebted steel makers and other large state-owned enterprises a fresh start at remaking themselves as market-oriented, profit-maximizing operations. So far, at least seventy-eight state-owned enterprises have signed debt-equity agreements, including several of Baoshan's subsidiaries: the Pudong Steel Company, Shanghai Steel Companies No. 1 and 5, and the Meishan Group. About ten steel companies have been deemed eligible for swaps, including Anshan, Panzhihua Steel, Tianjin Seamless Tube, Benxi Steel, Baotou Steel, Xining Special Steel, and Shuicheng Steel.[65]

Under the program, state-owned commercial banks transfer the debts of large, screened state-owned enterprises to one of four asset management corporations (AMCs) in exchange for bonds backed by the government. The banks get bonds because the corporations have no cash. The AMCs then swap this debt for a controlling interest in the indebted state-owned enterprises, which are being converted into joint-stock companies. The idea is that with the debt burden lifted and the AMCs free to restructure the state-owned enterprises as they (the owners) see fit, the state-owned enterprises will become profitable. In turn, the AMCs will be able to sell their shareholdings to investors and make good on the bonds issued to the banks.[66] Unfortunately, without privatization and institutional reform, potential investors have little reason to believe that the AMCs will be able to successfully remake state-owned enterprises. If investor demand for AMC shareholdings is insufficient, banks will likely lend again to struggling state-owned enterprises to keep up the value of the bonds.[67]

While the outcome of debt-equity swaps will differ from company to company, the outlook for steel companies tied to AMCs does not look good. There is little, if any, domestic or foreign investor interest in China's large, struggling state-owned enterprises. Debt-equity swaps may do little more than protect the jobs of company managers who see the swaps as the only way to clean up their balance sheets and improve their financial statements.[68]

There are still questions about the process by which authorities ultimately select the companies for these debt-for-equity swaps and whether or not the swaps are being offered as a one-time deal. Critics contend that the swaps are simply a way to dress up the books of debt-ridden state-owned enterprises. This skepticism is due largely to the fact that although seventy-eight enterprises have signed debt-for-equity contracts, none of the agreements had actually entered the AMC-management stage as of February 2000.[69] The World Bank warns that debt-equity swaps should not be seen as a panacea for money-losing state-owned enterprises.[70]

China Meets the WTO

Historically, China has used a number of trade restricting measures to protect its domestic industry from international competition, including tariffs, quotas, limitations on trading rights, product inspection requirements and unjustified fees and taxes. When China's likely WTO commitments are viewed in relation to China's industrial development policies in the steel sector, certain conflicts become evident. Consequently, as China makes the transition to full membership in the WTO, many of these barriers will come down. Following the conclusion of the landmark U.S.-China bilateral agreement reached in November 1999, it is possible to provide some indication of what specific terms may affect the steel sector.

Tariffs

It is anticipated that China will reduce tariffs on steel imports from the current overall average of 10.3 percent to 6.1 percent, with many of the largest individual tariff line reductions involving specialty steel products. Currently, nominal tariff rates range from 3 percent to 15 percent for carbon steel products and from 2 percent to 22 percent for stainless steel. Reductions will commence upon China's accession and will be completed by January 1, 2003.

Nontariff Barriers

The current situation concerning traditional nontariff measures and the extent to which they remain in effect is not as clear. What is certain is that many of these practices will have to be phased out before China joins the WTO.

Licensing and Quota Systems. The Ministry of Foreign Trade and Economic Cooperation (MOFTEC) has asserted that the old licensing and quota system has been abolished and that no such measures are currently being used to restrict steel imports. However, evidence suggests that these systems persist.

Media reports and interviews with various importers, including both trading companies and steel consumers, suggest that the licensing system remains in place.[71] An often-told story from 1999 is of a shipment of Japanese high-end steel that sat on the dock for weeks because no one had an import license with which to claim it. These licenses are often acquired by companies not in the business of importing steel, who then trade them with would-be importers for a profit.[72]

In addition, ample anecdotal evidence and various reports indicate the existence of a steel import quota. There are reports of an import target of 10 million MT that the government set for this year,[73] and of an outright ban on imports of thirty-five specific steel products that are currently produced in China.[74] By some accounts, the government maintains an explicit import quota on steel by means of an import registration system. According to interview sources, steel is a "specially named or designated commodity" that must be registered for import. Companies wishing to import such commodities must bargain with the municipal government each year for the total volume they want to import. The municipal government, in turn, gets its own aggregate quota allotment from MOFTEC.[75]

MOFTEC described the import registration system as a transition measure to full trade liberalization after China joins the WTO. According to MOFTEC, the newly implemented import registration system took the place of the old quota and licensing system. MOFTEC further explained that the new system functions merely as a monitoring mechanism. However, MOFTEC conceded that the registration system is designed to stop steel imports from becoming, in its view, "excessive." A representative from MOFTEC could not identify a specific level of imports that would be deemed excessive, however.[76]

It is anticipated that China's WTO commitments will include the elimination of various nontariff barriers, including import substitution measures, import quotas and nonautomatic import licensing and import registration requirements.

Import Trading Rights. The situation concerning the nature and extent of explicit import quotas is further complicated by China's import trading rights regime. Importing steel into China is not, in general, a business activity in which firms and individuals can freely engage. Instead, the government limits the right to engage in such trade to approximately 170 designated traders. These designated trading companies engage in what the Chinese refer to as general trade in steel, *i.e.*, importing steel that is not subsequently re-exported after further processing or manufacturing. A separate group of designated trading companies engages in processing trade, *i.e.*, importing steel for re-export after further processing. According to MOFTEC, the value-added tax (VAT) rebate on exports requires separation of the two types of trade.[77]

Restricting import trading rights to designated traders does not, in principle, limit the volume of steel imports into China, particularly since there are 170 such traders. In practice, however, there are serious concerns with actual and potential limits on imports. Full liberalization of trading rights is something that WTO members are focusing on as a condition of China's accession to the WTO. To the extent that China's restriction of trading rights in steel effectively limits imports, it functions as an implicit quota.

It is anticipated that after a short phase-out period—the exact length of which has not yet been determined—China will commit to eliminate designated state trading in the steel industry. When this phase-out period expires, all domestic and foreign companies will have the right to import and export steel products.

Security Deposits. According to the *Nikkei Weekly*, since October 1999, foreign manufacturers in China that import for processing and re-export must post large security deposits to ensure duty-free treatment of their raw material imports. The *Nikkei Weekly* further reports that "the system is designed to protect state-owned manufacturers mostly in the steel and chemicals industries from their competitors."[78]

Import Substitution Program. China, like other countries, is also concerned about maintaining the price competitiveness of domestically produced steel inputs vis-á-vis imports. In 1998, China implemented the Steel Import Substitution Program (SISP), which sets import substitution targets for China's largest steel producers. The SISP is designed to stimulate domestic production capability at the high end of the steel market, *e.g.,* stainless steel and cold-rolled sheet for automotive applications. The industrywide substitution target for 1999 was 3 million MT.[79]

Under the SISP, steel producers receive a rebate of the 17 percent VAT on sales to steel users who produce for export and who would otherwise import to meet their needs. The SISP effectively lowers by the amount of the VAT rebate the price that these steel producers can charge for their steel.[80] The rebate appears to be working as intended, as twelve of the 27 steel producers that signed import substitution contracts—including Baoshan, Wuhan, Shougang, and Anshan—exceeded their targets. The industrywide target for 2000 under the SISP is thought to be 3 million MT.[81] Baoshan remains the primary investment vehicle for producing import substitutes under the government's broad steel import substitution policy. Consistent with that fact, Baoshan had a 1999 import substitution target under the SISP of 1.3 million MT—three times as great as the next largest, Wuhan's 400,000 MT target.[82]

Subsidies Disciplines. China is expected to be subject to strong subsidy disciplines under the WTO Agreement on Subsidies and Countervailing Measures, including the immediate elimination of export subsidies and import substitution subsidies and certain additional disciplines that take into account the special characteristics of China's economy and, in particular, of its state-owned enterprises. As a WTO member, China will not be precluded from continuing to provide government support to Baoshan, Anshan, Wuhan, and Shougang for technological upgrading and transformation, although this effort will be subject to discipline through the enforcement of U.S. rights under the Agreement on Subsidies and Countervailing Measures.

Prohibition on Foreign Distributors. It is anticipated that China will commit to eliminate, after a short phase-out period, its prohibition on foreign companies distributing imported steel products in China or providing related distribution services. When this phase-out period ends, foreign companies will be permitted to engage in a full range of distribution services.

Added Protections Against Dumping. It is not clear when the Chinese steel industry will shift its focus to the development of export markets, but when it does, the terms of China's WTO accession should provide the United States with the means to safeguard the U.S. steel industry from unfair trade. In addition to enforcing subsidy disciplines under the Agreement on Subsidies and Countervailing Measures (including the prohibition on export and import substitution subsidies) the United States will be able to use its current nonmarket economy methodology in antidumping proceedings for fifteen years after China's accession. The United States will also be able to use a strong product-specific safeguard to address import surges for twelve years after China's accession.

Assessment of Export Potential

Although the export potential of China's steel industry is not what the size of the industry might suggest, it is nevertheless a concern because of the government's firm commitment to steel as a strategic industry and involvement in investment planning. It is likely that Baoshan will be an internationally competitive exporter of high-end products in the near future. While Chinese government representatives and private industry analysts expect Baoshan to become an internationally competitive exporter in the next two to three years, traders and steel consumers expect Baoshan to reach this level much sooner. Although some of Baoshan's most demanding customers express concern with its quality control, less technically demanding consumers are concerned only with the fact that

Baoshan is not equipped to provide various types of product coatings. While this assessment does not take into account the financial burden on Baoshan of having recently absorbed several unprofitable Shanghai steel firms, it does give some indication of the potential world-class efficiency of the company.

Other producers like Wuhan do not yet have Baoshan's export potential. However, these companies have invested significantly in high-end production lines. Many steel consumers believe that it is merely a matter of time before these companies perfect the use of the technology and are producing internationally competitive products. The average time frame assumed for these runner-up Chinese steel producers is three to five years. Some steel consumers believe that if Baoshan makes the jump, other steel producers in China will need less time to catch up, following the Baoshan model.

The Administration expects China's WTO membership and ongoing reform efforts to result in reciprocal trade in steel that, from a supply perspective, is fully consistent with commercial considerations. If that is not the case, a larger amount of China's steel production may find its way into overseas markets, particularly if China finds itself less isolated from macroeconomic shocks and market destabilizing forces than it was during the 1997–1998 Asian financial crisis.

The Ukrainian Steel Industry

The Ukrainian steel industry has a number of impediments to its international competitiveness. Both domestic consumption and shipments to its leading foreign customer, Russia, have plummeted. Most of its steel production continues to be based on outdated, inefficient technology. It suffers from high input costs, particularly for energy. And it has failed to enact a serious program of privatization thereby losing access to much needed investment, innovation and management know-how.

Despite these difficulties, Ukrainian steel producers have set their sights on exports as never before, raising a number of concerns for the U.S. steel industry. In its strong support of the steel industry, the Ukrainian government has taken several measures:

- Designating the steel industry a national champion and looking to it to generate hard currency and drive economic development. To guarantee steel's future, the government has maintained production levels and implemented a modernization program to upgrade the capital stock of targeted producers.
- Tolerating market distorting practices that have kept uncompetitive, state-controlled steel companies from closing. These include continued use of barter and bankruptcy protection.
- Dispensing to Ukrainian steel companies a range of government assistance including: reduced or exempted taxes, forgiveness of debts and preferential interest rates.

In addition, a U.S. trade case against Ukraine could indicate an attempt to replace Russian steel imports halted by U.S. antidumping actions during the U.S. steel crisis. The case, involving cut-to-length plate, resulted in relief for U.S. steel producers in the form of a quota arrangement.

Profile of the Ukrainian Steel Sector

In 1999, Ukraine ranked as the eighth largest steel producing country in the world and generated over 27 million MT of crude steel. [83] Steel production in 1998 amounted to 23 percent of Ukraine's total industrial output. In contrast, during the same year, steel in Russia comprised only 4.1 percent of total industrial production.[84] Considering that steel in Ukraine accounts for a larger share of GDP than in any other former Soviet Republic, the Ukrainian government has placed great emphasis on utilizing the steel industry as a key component of future economic development.[85]

Ukraine's Big Four

More than half of Ukraine's total annual crude steel productive capacity is concentrated in its four largest integrated steel mills. Kryvorizhstal has annual capacity of 10.6 million MT, or almost one-fifth of Ukraine's total steel capacity; Mariupol's annual capacity is 7.2 million MT; Azovstal's annual capacity is 7 million MT; and Zaporozhstal's annual capacity is 4.8 million MT.[86]

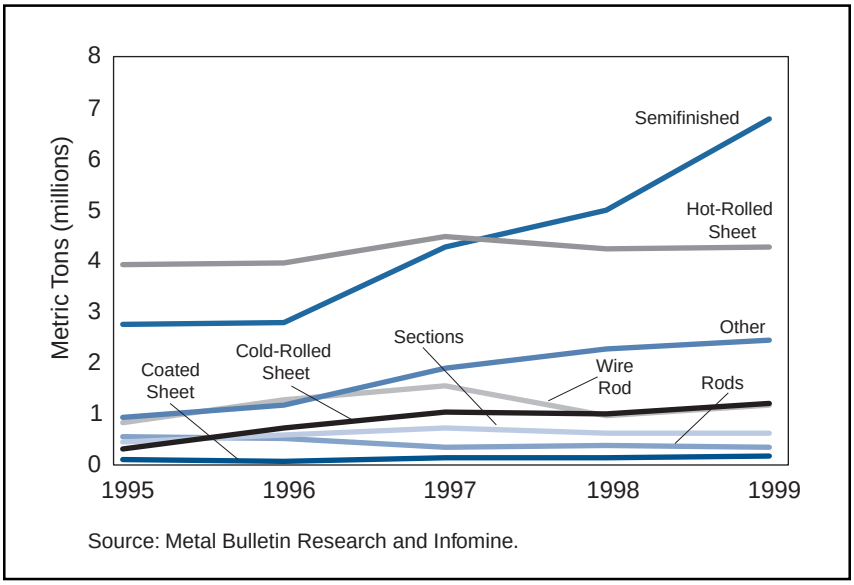
Some Advantages

These mills benefit from a number of historic advantages that have helped the industry maintain a respectable presence. The steel industry's raw material sources are well developed, and many mines are close to the steel mills themselves. Ukraine is rich in iron ore deposits and other critical raw steelmaking materials.[87] Ukraine's largest mills are well-positioned for export, with easy access to the Black Sea.[88] And Ukrainian steel workers are well-trained, and the country's labor rates are low.[89]

Role of Exports

Steel exports now account for 40 percent of the country's exports and hard currency earnings.[90] In the last few years, Ukraine has exported well over 60 percent of total finished steel output. With the exception of Russia, Ukraine now ranks as the largest steel exporter among the former Soviet Republics. There is little doubt that the Ukrainian government will continue to give steel exports a key role in Ukraine's economic development and will look to exports as a vehicle for generating badly needed hard currency.

Exports of finished steel products peaked in 1997 at 12.1 million MT before slipping back slightly to 11.9 million MT in 1998 as a result of trade actions against Ukraine.[91] Ukraine's flat-rolled steel exports have increased significantly and totaled nearly 14 million MT during the period 1997–1998. Ukraine's exports largely consist of hot-rolled steel and semi-finished products *(Chart 6-6)*, the bulk of which are exported to Asia and the Near East.[92] Ukraine's largest customers for hot- and cold-rolled steel include China and Turkey *(Charts 6-7 and 6-8)* and for wire rod, they include China, Turkey, and Russia.



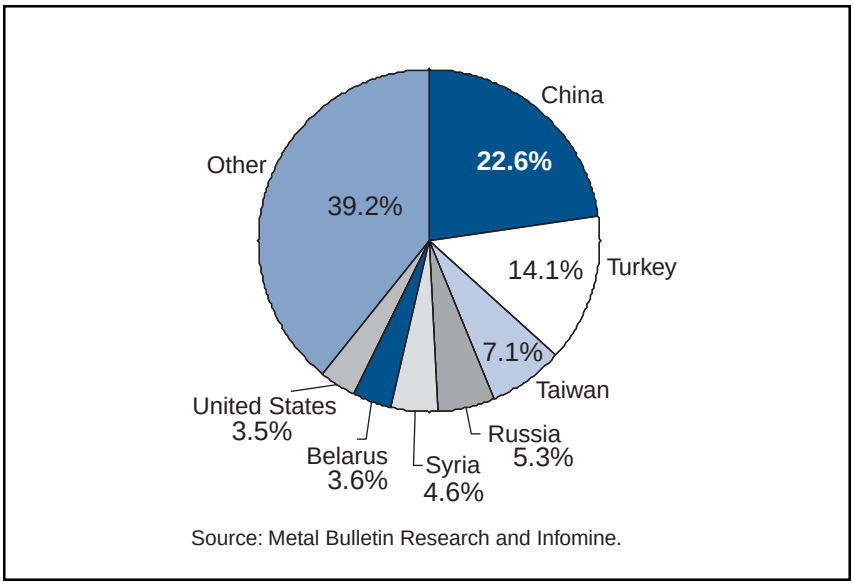
6-6. Ukrainian Steel Exports by Main Product Group (1995–1999)

Declining Domestic Consumption and Exports to Russia

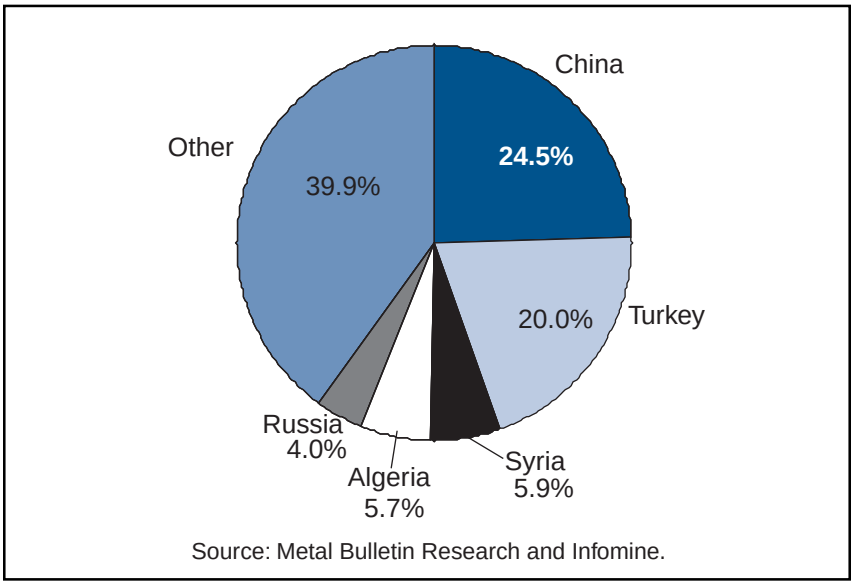
The Ukrainian government's heightened attention to exports has been driven by a dramatic drop in domestic consumption and the collapse of demand from its most important foreign customer, Russia.

Domestic Consumption

In 1998, Ukraine's apparent steel consumption was a mere 31 percent of its 1992 level, having declined most significantly between 1995 and 1998.[93] This decline, coupled with a corresponding drop in Russian demand for Ukrainian steel, led Ukraine's steel industry to look globally for new markets.[94] To some extent, increased trade is part of the broader process of economic transformation. Expanding export markets is important for Ukraine's steel industry. Ukraine's domestic consumption of rolled steel fell from 7.5 million MT in 1995 to just 3 million MT in 1999.



6-7. 1998 Hot-Rolled Steel Exports by Destination, Ukraine



6-8. 1998 Cold-Rolled Steel Exports by Destination, Ukraine

The decline in domestic steel consumption was prompted by a severe downturn in the Ukrainian economy, which was mirrored throughout the former Soviet Union. Since 1991, Ukraine has been in a protracted economic slump, and stagnating reform efforts have worsened the situation. Although considerable progress has been made in recent years, Ukrainian economic reforms lag behind other countries transforming their economies. The private sector remains in an embryonic form, except for some notable exceptions.[95] The 1998 Russia crisis exacerbated an already strained economic situation and damaged Ukraine's traditional export markets. The Russia crisis, Ukraine's economic over reliance on Russia, and stagnating domestic reforms made the situation worse, leading to a further decline in the country's GDP and a 35 percent nominal depreciation of the Ukrainian currency, the hryvna.[96,97,98]

Russian Trade

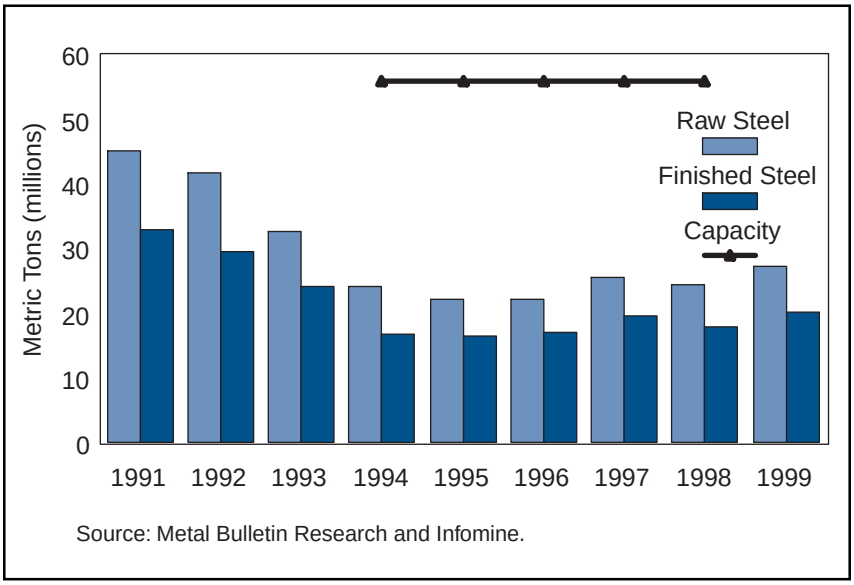
Ukraine's steel sector had always been able to rely on Russia as an outlet. Historically, Ukrainian steel mills were a primary raw material source for the Soviet Union's tanks, machines and construction projects.

After the Soviet Union's dissolution, Ukraine continued to supply key products to Russia's military-industrial complex led by steel products including heavy machinery and chemicals. In 1994, Ukraine's steel exports to Russia remained strong with exports totaling 1.1 million MT of semifinished and finished products. By 1998, exports to Russia had dropped dramatically to just over 700,000 MT.[99]

Effects on Capacity Utilization and Production

Falling domestic consumption and the collapse of Russian demand had a severe impact on Ukraine's capacity utilization and production levels throughout the 1990s:

- **Capacity.** By 1998, Ukraine's annual crude steel capacity was close to 56 million MT, yet actual output was only half that. In 1999, capacity utilization increased slightly, to 57 percent.
- **Production.** Annual raw steel output dropped dramatically from 45 million MT in the early 1990s to 22 million MT in 1995 and 1996. Annual finished steel output dropped from 30 million MT in 1991 to 16–17 million MT per year between 1994 and 1996. Annual finished steel output has increased slightly to 18–19 million MT in the last few years[100] *(Chart 6-9)*.



6-9. Ukrainian Raw and Finished Steel Output

Competitiveness Issues

Ukraine faces considerable challenges as it seeks to sustain its steel industry in the face of lost domestic and Russian demand. Since the breakup of the Soviet Union, Ukraine's steel industry has been plagued by bad credit, an acute shortage of working capital, low productivity and rapidly increasing debt. Ukrainian steel producers have been slow to make significant labor force reductions and have not been effective in replacing obsolete or worn-out equipment.

Outmoded Technology

Perhaps its single greatest challenge is outdated equipment and processes. Despite its geographic and labor advantages, Ukraine's steelmaking technology, in general, is decades behind that of most other major steel producing countries. As a result, steel companies have not been able to reap maximum cost benefit from the country's relatively strong raw material sector.

Antiquated steelmaking technology and manufacturing processes include inefficient open-hearth furnaces and limited continuous casting capability which require far more electricity and labor than other methods. Open hearth furnace technology accounts for nearly 55 percent of its steel output. A mere 34 percent of output in 1998 was generated from comparatively efficient basic oxygen furnaces, and less than 2 percent of total crude steel output was generated using electric arc furnace technology.[101] Only

two firms, Enakievo and Konstantinovsky, have managed to move completely away from open-hearth furnace technology.

While Ukraine's steel sector has worked to implement continuous casting technology, it still accounts for only 18 percent of total production.[102] Without this technology, the steel industry will continue to need an oversized labor force.[103]

Productivity. The negative effect on productivity has been profound. In 1997, Ukraine's steel industry employed 480,000 workers,[104] more than double the number of steel workers currently employed in the United States. Even with this sizable labor force, Ukraine's crude steel output is less than one-third of total U.S. annual crude steel production. Brazil, with annual crude steel production almost identical to that of Ukraine, employed an active workforce of 63,000[105] in 1998.

Product Mix. The general lack of modern equipment has constrained the steel industry's ability to replace its semifinished exports with adequate quantities of higher value added products, including carbon plate and hot- and cold-rolled steel, that meet international quality standards. Most Ukrainian mills remain heavily oriented toward the production of low-quality long products, with only two mills producing strictly higher-value-added flat products.

High Energy Costs

While technology has hit Ukrainian steel on the output side, energy costs have hit it on the input side. Until 1994, the Ukrainian government supported steel companies by providing significant electricity subsidies.[106] With the election of President Kuchma that year, the state opted to begin phasing out electricity subsidies in order to force companies to improve efficiency. Electricity costs for the steel industry have subsequently increased.[107] A typical Ukrainian steel mill is burdened by a high cost of production.[108]

Historically, the Ukrainian steel industry has depended heavily on Russian energy inputs. Ukraine currently owes Russia roughly $1.5 billion for natural gas and has been known to "appropriate" for its own use Russian-origin natural gas destined for Europe that flows through Ukrainian pipelines.[109] This has led Russia to impose stricter conditions on natural gas supplies to Ukraine and has driven energy prices even higher. High energy costs have resulted in growing indebtedness to suppliers of electricity and natural gas.

Ukraine Sticks With State Ownership

Despite the Ukrainian steel industry's deeply rooted technological, product mix and structural problems, the Ukrainian government has not yet turned to large-scale privatization as a way to jump-start the restructuring of its steel sector. After a promising start on the path to privatization and restructuring in 1996, the Ukrainian government quickly became protective of its steel sector and has since been reluctant to loosen its grip on the industry. Only one steel company is effectively privatized; the rest remain government-run.

Privatization Stalls in the Steel Sector

The Ukrainian government has, generally, looked to privatization as a way to stimulate economic reform.[110] Initially, the privatization process seemed to progress smoothly. The European Union's Technical Assistance Program for the Commonwealth of Independent States reports that by September 1999, Ukraine had managed to privatize 8,500 of a total of 10,000 medium-sized and large state-owned enterprises. This effort resulted in the privatization of 70 percent of the capital of these firms.[111]

Ukraine's steel industry is a different story altogether. The Ukrainian State Property Fund (SPF), the agency charged with monitoring, regulating and implementing privatization efforts, has favored

privatization of companies that are not considered to be of strategic importance, but it has had little interest in privatizing large industrial sectors such as steel and other industries with potential military application.[112]

In Ukraine, only the Donetsk Iron and Steel Works (Donetsk) has been privatized to the extent that government ownership has fallen below a majority controlling share.[113] In 1996 the SPF handed over 40 percent of Donetsk to ordinary citizens, with the government retaining 20 percent.[114] The SPF then went a step further and offered the remaining 40 percent to an investor who was willing to meet the requirements of SPF's noncommercial tender: a modernization plan and the funding to carry it out.[115] Overall, the Donetsk privatization experience has been a success *(see box)*.[116]

Example of Successful Privatization

Hope for Donetsk Iron and Steel Works came from a Hong Kong–based steel manufacturer and trader that was already managing Donetsk, British MetalsRussia Ltd. Since the acquisition, MetalsRussia has invested $9 million in equipment and $17 million in operating capital. In addition to these funds, which partly have gone to the installation of modern equipment (including a new continuous casting machine, a furnace-ladle machine, an automatic weigher, a water treatment unit, and updated laboratory equipment) the new management has focused on business strategy, such as identifying appropriate markets, reducing energy costs, and producing quality products. Donetsk produces semifinished products (billets and slabs), structural shapes and sections, and hot-rolled and cut-to-length plate. The company claimed a profit in 1997, but was not able to escape losses in 1998, due mostly to the shrinking of its export markets.

Despite these positive signs, the Ukrainian government put a five-year hold in 1999 on the proposed sale of the controlling share of eleven steel and coal-tar chemical plants. These plants, including Azovstal, Mariupol and Dnepropetrovsky, three of Ukraine's major steel producers, remain entirely under state control. While minority shares of certain steel companies have been sold to private investors including citizens and workers, the government has been reluctant to enter into final sales agreements and continues to retain control over all but Donetsk. The Ukrainian government exercises control over steel companies by requiring that Ukraine's cabinet consult with parliament in selling off strategic and large state-owned companies to private investors.[117] One expert has noted that the Ukrainian government looks at privatization as "just a way of repairing the budget loopholes," despite Western pressure to use privatization proceeds to promote institutional reform in its industrial sectors.[118] To the extent that privatization is favored, it has often been used as a quick fix in paying off wages and pension arrears.[119]

Consequences of Retaining State-Owned Industry

Retaining control of the steel industry will only serve to reinforce existing problems in the steel industry:

- Because steel companies remain primarily state-run, many steel firms in Ukraine are missing out on badly needed infusions of capital as banks and other profit-oriented enterprises have set their sights on private-sector investments elsewhere.[120]
- Lacking private management expertise, the steel sector will continue to struggle to implement western accounting practices. Ukraine's state-owned industrial giants, including steel companies, still appear to set prices for industrial exports with little regard for actual production costs and real market conditions.

Market Distortions

Continued state ownership of the steel industry also means that structural problems will undermine any efforts by the industry to modernize.

- **Barter.** Ukrainian steel companies have relied in part on a barter system that allows them to trade steel products indirectly for energy and raw material inputs. Elaborate bartering schemes have driven up costs and increased company debt. One barter scheme, described in the *Kiev Post*, reports that "by selling at a loss, companies such as Kryvorizhstal cannot pay for inputs in hard currency and become particularly dependent on energy suppliers, which they usually pay in barter. Suppliers can overvalue the price of the inputs they provide to government enterprises and reap handsome rewards with the commodities they earn in exchange."[121]
- **No Bankruptcies.** Ukraine's government has not allowed steel companies to go bankrupt. Failing steel firms are simply shouldered by the Ukrainian taxpayer, and bankruptcy remains a concept that only applies to privately owned companies.

U.S. Trade Cases

These structural problems, coupled with steep and prolonged declines in domestic and Russian demand, have increasingly led Ukraine steel producers to export. Since 1993, Ukraine has exported steel in increasing volumes to the United States, including semifinished products, hot-rolled steel and cut-to-length plate. From 1992 to 1996, Ukrainian steel exports of cut-to-length plate to the United States rose dramatically. As a result, the U.S. industry filed an antidumping case against cut-to-length plate from Ukraine. A quota agreement settled the case and resulted in an immediate drop in exports.

Steel Industry Restructuring

Since the antidumping case was filed, the Ukraine government has continued with its steel industry restructuring plan. With privatization taking a back seat role at best, the Ukrainian government has actively moved the industry's modernization effort forward. Structural challenges within the industry and the collapse in domestic and regional demand have forced the government to look hard at how to effectively modernize its steel industry. In the next decade, a handful of Ukraine's best mills will be the focus of the government's effort to build a profitable and internationally competitive steel industry.[122] With the government's backing, the steel sector will attempt to reduce overall production capacity, upgrade steelmaking and rolling technology and establish itself as an export-oriented industrial engine that can drive Ukraine's domestic economic growth.

Modernization and the 2010 Plan for Steel

In 1998, industry analysts predicted that approximately 10–12 million MT of surplus steel would float in the world market and urged Ukrainian steel companies to throw more resources toward the production of higher value-added steel for which there was rapidly growing demand.[123] The government responded in 1997 and 1998, by spending 2.5 billion hryvna (approximately $800 million) on the reconstruction of the mining and steel sectors. This included the commissioning of two wire mills and several ladle furnaces.

A new program has now been put in place to modernize the overall steel sector by 2010.[124] This program seeks to reduce overall capacity and increase productivity at a number of steel plants, including two of Ukraine's top four firms. In the next five years, the program aims to shut down four small blast furnaces with annual capacity of 3.3 million MT, fifteen open-hearth furnaces with annual capacity of 5.5 million MT and three outdated rolling mills with annual capacity of 1.5 million MT. From 2006 to 2010, the plan calls for shutting down an additional blast furnace, two open-hearth furnaces and four blooming mills with annual capacity of 14.5 million MT. The government estimates the total cost of this project at somewhere between $1 billion and 1.5 billion.[125]

Increase in Government Assistance

Because the Ukrainian government has maintained effective control over its steel industry, it is likely to continue to prop up struggling steel firms. Absent private investment, industry will continue to have no

choice but to look to various government programs, including low-interest loans, preferential tariffs and tax breaks, in order to stay afloat. This assistance, coupled with the existing distortions in the Ukraine steel sector, increases the likelihood of unfairly traded exports.

In July 1999, the Ukrainian Rada passed a law (a so-called "economic experiment") that aims to aid steel and mining companies to "increase their working capital for upgrading their production facilities and to avoid barter transactions in the purchase of critical supplies (gas and energy resources)."[126] The law covers seven of Ukraine's fifteen integrated steel makers and grants numerous rights to metal and mining companies:

- A 70 percent reduction on profit taxes.
- A 50 percent reduction on the innovation tax.
- Exemptions from state budget debts predating July 1, 1999.
- The right to postpone payments to the state budget for a period of three years.[127]

In 1999, the Ukrainian government also passed a resolution exempting the largest steel producer, Kryvorizhstal, from the payment of taxes and forgiving its extensive debts to the state.[128] In exchange, the government noted that "the enterprise must submit to a government-mandated restructuring program, which will involve transferring its 'non-industrial' holdings to the Kryvy Rih municipal authorities."[129] It is unclear whether the case of Kryvorizhstal is one more instance of government intervention or rather the first steps toward much-needed restructuring, including the divestiture of social functions of the enterprise.

An Assessment

The Ukrainian steel industry is impressive in size but survives in its current form only as a result of the government's willingness to prop up struggling firms, to prevent companies from entering bankruptcy and to keep private investors outside the gates of Ukraine's best steel companies. Ukraine's steel industry will likely continue to survive in an outdated and inefficient form as the government dispenses tax privileges, preferential tariffs and duties and debt forgiveness.

Steel exports will undoubtedly continue to flow from Ukraine, given the country's capacity for steel production, stagnant domestic demand and the fact that its best steel firms have already established themselves with overseas customers. The Ukrainian government appears committed to a thorough rebuilding of the top tier of its steel industry. If the modernization plan remains on track, a handful of Ukraine's best steel companies will be well positioned to compete in international steel markets. Although Ukraine has not exported substantial volumes of finished steel to the United States, the steel industry is beginning to lay claim to a share of the U.S. market. Total U.S. imports of steel mill products from Ukraine during the first four months of 2000 were more than ten times higher than the same period in 1999.[130] This dramatic increase can be partially attributed to rising imports of hot-rolled steel[131] as Ukrainian producers attempt to fill a gap left by Russian producers constrained by U.S. trade actions.With the Ukrainian government paving the way for its steel sector, there is reason to be concerned about the potential for unfair trade.

The Indian Steel Industry

All of India's social, political and economic complexities are reflected in its steel industry. For many years, these complexities were of little concern to global steel trade because the Indian government was intent on meeting domestic demand, rather than on promoting exports. With forecasts for booming domestic demand in the 1990s, the government promoted an aggressive expansion of steel production. When domestic demand faltered in the late 1990s, the Indian steel sector was left with unused capacity and massive investments in the pipeline. Rather than let the market rationalize capacity, the government stepped in to prop up the industry. This had the effect of pressuring steel producers to export.

Today India is the world's tenth largest steel producer.[132] With more Indian steel companies expected to enter the global steel market, the role played by the Indian government is now a matter of serious consideration. Of particular concern are market distorting practices, including various forms of government assistance, import barriers, and export subsidies:

- **Government Assistance.** Mechanisms used by the government to promote investments in steel production or to prop up teetering enterprises include government loans, loan guarantees for private sector loans, debt writeoffs, and tax breaks.
- **Import Barriers.** Indian steel producers have long enjoyed the protection of high tariffs on steel imports, currently averaging about 25–30 percent, and they have benefitted from the cumbersome customs procedures with which importers must contend. When faced with growing imports and falling prices in the late 1990s, the Indian government heeded steel industry calls for protection by taking additional steps, including setting minimum floor prices for imports and adding a 10 percent surcharge on top of the basic import duty. The Administration is currently reviewing whether India's floor prices are consistent with the WTO Agreement.
- **Export Subsidies.** Export subsidies, which have been used by India for many years, take on a greater significance given the industry's new emphasis on exports. Top exporters receive a voucher for 10 percent of the value of their exports and are eligible for reduced duty rates for importing capital goods. Exporters can also use a passback scheme to avoid paying duties on inputs. Other inducements include licensing, duty and export financing subsidies.

With continued government assistance and protection of the domestic industry, the potential exists for trade-distorting practices to lead to unfairly traded Indian steel exports.

Industry Profile and Development

Long considered one of India's public sector industries destined for greatness (the so-called nine jewels), India's steel industry was fostered in a highly protected and controlled environment. The climate in which the industry grew was characterized by high import tariffs, government assistance, government control over prices and distribution and state allocation of resources. New investments in capacity were carried out with direct government funding. A protected domestic market and seemingly endless government support bolstered domestic production with little incentive to maximize profits.[133]

Era of Government-Controlled Steel Production

From 1948 to 1990, production of crude steel grew an average 6.1 percent per year.[134] During this time, India became dependent on the industry not only for steel supply, but for employment and the other social benefits associated with job creation, *e.g.*, schools, medical care and infrastructure. The industry, meanwhile, became dependent on the regulated environment and lack of competition. All steel capacity was created through public sector units and was used largely by other public sector units in infrastructure and industrial developments *(see box, next page)*.[135] Under the controlled economy, efficiency and quality were not priorities. Growth in steel production under government control was slow vis-á-vis other developing countries, such as China. Per capita consumption of steel in India remained among the lowest in the world, increasing from 5 kg in 1950 to only 24 kg in 1998, against a world average of 140 kg.[136]

Deregulation and Rapid Growth

In 1991, as part of the government's economic liberalization program, the steel industry was largely deregulated. Price and distribution controls and restrictions on trade were abandoned. The removal of licensing restrictions permitted unfettered investments in new steel plants by the private sector, and import

Publicly Owned Steel Companies

While there are now several private steel companies in India, the largest steel company by far is the government-owned Steel Authority of India Limited (SAIL). SAIL had a crude steel production capacity of about 10.6 million MT in FY 1997–1998 and employed more than 175,000 people. SAIL's main strength is its 65 percent market share of domestic hot-rolled production. The emergence of new players in this sector will likely increase competition for hot-rolled steel.

Since liberalization in 1991, SAIL has invested heavily in modernizing its plants, leaving it with a very high debt burden—about three times equity. The recent government debt writeoff should reduce that burden to about two to one. In addition, SAIL's decision making process is slow and suffers from significant bureaucracy in the Ministry of Steel.

duties were reduced. The government expected its economic reforms to produce rapid and sustained economic growth. This growth, in turn, was projected to drive steel demand to more than 32 million MT by 2000.[137] The government developed a strategy for expanding the country's steel production to meet and exceed this forecast.[138] Long-term lending institutions, such as the Industrial Development Bank of India, were encouraged to extend financing for new steel capacity in the private sector, and for modernization and expansion of existing public sector plants.[139] Under these expectations of rapid economic growth, massive investments were made in new steel capacity and in modernization of existing facilities *(see box below)*.[140] According to the Ministry of Steel, nineteen new steel projects, many of them greenfield plants, were sanctioned after the industry was deregulated.[141]

In the first few years following liberalization, the economy boomed and the steel industry responded favorably to the newly deregulated environment. Apparent domestic consumption of finished steel products grew by almost 6 million MT between 1994 and 1996, (by 22 percent in 1995 and 14 percent in 1996).[142] Consumption and production of finished steel grew in step, both reaching 21 million MT by 1996.[143]

Domestic Steel Demand Screeches to a Halt

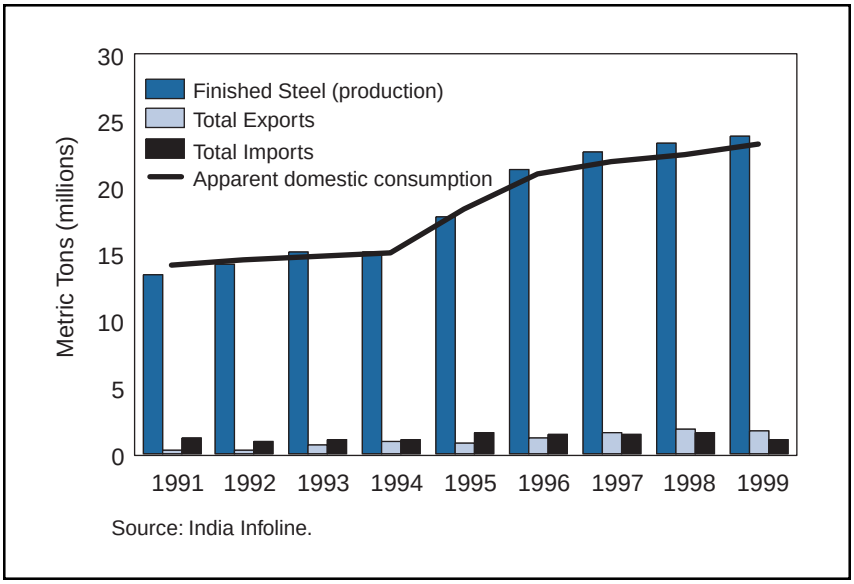
By the mid 1990s, it was clear that the government's demand projections had been overly optimistic. By FY 1996–1997, the industry was stuck in a cyclical downturn; demand for steel stagnated as growth

Privately Owned Steel Producers

TISCO is India's second largest steel producer (after SAIL) and largest private-sector steel company, with a total capacity in FY 1998–1999 of about 3.1 million MT. Along with SAIL, it enjoyed growth in a completely regulated steel market prior to 1991. TISCO is considered to be very well managed and, unlike SAIL, has very good labor relations. Early in the 1990s, it began modernizing its production facilities, replacing all open-hearth furnaces with more efficient basic oxygen furnace technology. TISCO has responded to the emergence of new, more efficient producers such as Jindal, Essar and Ispat by further improving its plants, and strengthening its marketing and distribution network. TISCO is also focusing on moving its product mix toward flat products which have higher profit margins, and on exports to improve sales growth. With plans to complete a new 1.2 million MT cold rolling mill in 2002, TISCO executives are confident that their company will become one of the most efficient steel producers in the world.

In addition, there are thousands of smaller, privately owned producers—*i.e.,* small to medium-sized induction and electric arc furnace producers, pig and sponge iron units, rerollers, and stand-alone cold rollers and galvanizers. Having previously relied on protection in the regulated market, many secondary producers have closed since 1991. The survivors, particularly those using electric arc furnaces, face high power costs, uneven quality and limited availability of scrap.

among steel-intensive sectors, such as consumer durables and capital goods, declined. Moreover, as India's fiscal deficit grew, the government drastically reduced spending on infrastructure and other public projects, further weakening domestic demand for steel.[144] By FY 1998–1999, apparent consumption of finished steel had reached just under 24 million MT[145] *(Chart 6-10),* 8 million MT shy of the government's projections, while domestic capacity had increased to more than 32 million MT.

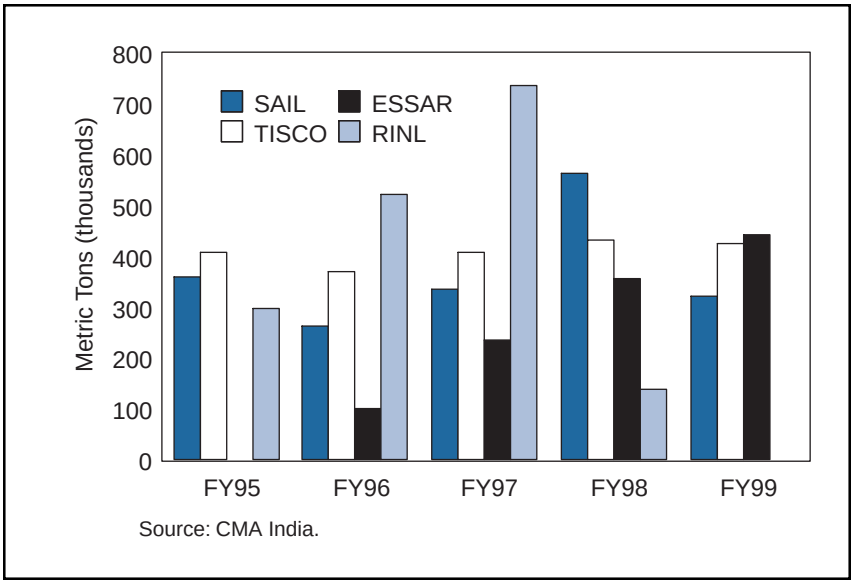


6-10. Indian Finished Steel, All Products

Impact of the Asian Financial Crisis

The Asian financial crisis further exacerbated the industry's problems.

Domestic Steel Prices. Low-cost imports (mostly from Russia and the other former Soviet Republics) significantly depressed domestic prices. While it does not appear that a large quantity of imports entered India, steel consumers could pressure domestic producers into lowering prices. Indian steel makers that competed against imports from Russia and other former Soviet Republics faced foreign prices as low as $180 per MT.[146] Domestic prices for hot-rolled coil dropped from a high of more than $330 per MT to less than $195 per MT over the course of 1998.[147] Prices of most domestic steel products declined precipitously in 1998, eliminating the profit margins of domestic producers.[148]



6-11. Exports of India's Major Producers

Declining Exports. Indian producers also faced a loss of demand abroad, particularly in the southeast Asian markets on which Indian steel producers had depended. India's total steel exports to the region fell by 25 percent from FY 1996–1997 to FY 1997–1998.[149]

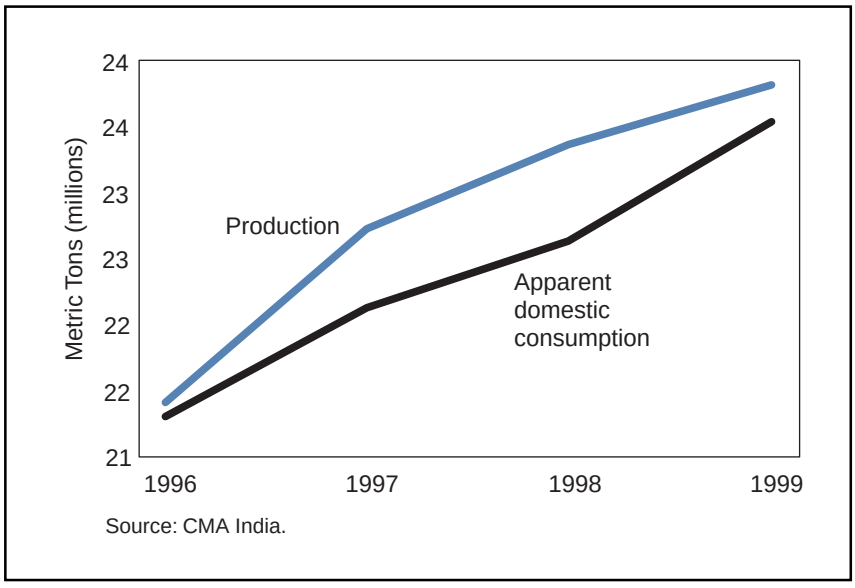
Total exports fell another 18 percent in the next fiscal year,[150] forcing producers to lower crude steel capacity utilization from 76 percent in FY 1997–1998 to 71 percent in FY 1998–1999 *(Chart 6-11).*[151]

Costly Debt

By 1999, worsening debt burdens resulted in significant losses for many steel producers. Some of the new steel plants had come on-line in the midst of depressed demand. By some estimates, some of the new flat-rolled plants will be operating at between 40 percent and 50 percent of installed capacity.[152] When these investments were made, banks and investors payed little attention to expected returns or project risks, focusing heavily on the government's projections of booming demand.[153] Investors did not heed the relatively high cost of capital, financing many new investments with short-term lending at high interest rates. The large integrated producers, who had also invested heavily during the 1990s in plant modernization, also suffered under unsustainable debt levels.

Structural Overcapacity

Massive investments and government intervention, combined with stagnating growth in domestic demand, have left the Indian steel industry with significant overcapacity. These conditions contributed to dramatically falling prices in many product categories. While steel producers have begun to see relief, Indian domestic prices have not rebounded at the same pace as international prices given this excess capacity. One government source cites domestic overcapacity as the principal problem facing Indian steel producers.[154]



6-12. Indian Production vs. Consumption, Finished Products

The most problematic product category is flat products, which accounted for most of the new investments that were made during the past decade by the private sector. One source estimates demand for hot-rolled coils in FY 1999–2000 of just over 9 million MT, compared to supply of almost 12 million MT (including imports).[155] The government forecasts that domestic capacity of hot-rolled coils will increase to 15 million MT by 2001–2002 when additional projects come on-line. Domestic demand would have to grow by more than 10 percent a year for the next four years in order to meet the government's early 1990s forecasts[156] *(Chart 6-12)*.

Government Assistance

As the situation for Indian steel producers worsened in FY 1998–1999, the industry began a campaign to obtain aid from the government, with the Ministry of Steel lobbying on their behalf. As a result, the government stepped in to address the problem of bank overexposure and steel companies' need for debt relief. Another measure to assist the steel sector includes lifting the surcharges on major steel inputs.[157] The government's intervention has allowed producers to continue operating and maintain capacity.

Banks' Debt and Equity Exposure

Debt. Low and declining sales volumes in domestic and export markets made it increasingly difficult for Indian steel companies to service their loans. The exposure of financial institutions in India due to aggressive lending practices in the early 1990s was already on average 12 percent of banks' portfolios.[158] Many of the new steel projects were not completed within stipulated time frames, forcing companies to take on additional debt.

Equity Stakes. Major equity stakes in the steel sector increased many financial institutions' exposure. Their stakes had originally accumulated due to the lack of public interest in the companies' equity issuances.[159] Even though these banks have refused to finance additional steel projects, their existing equity stakes have compelled them to refinance the steel companies' current debt.[160] To that end, the Industrial Development Bank of India promised that while no new projects will be approved in the near future, all plants currently in the pipeline will receive sufficient funding to be completed.[161] Since the Asian financial crisis, about $2 billion in additional financing has been sought.[162]

The ultimate effect of this assistance has been to increase company borrowing, even as company profits declined, resulting in growing debt to equity ratios *(Chart 6-13)*.

Import Surcharges. The government also lifted the surcharges levied on major steel inputs, forgoing tax revenue in an effort to reduce production costs for suffering Indian steel companies.[163]

	1996–1997		1997–1998		1998–1999	
	Profit (million R)	**D/E (percent)**	**Profit (million R)**	**D/E (percent)**	**Profit (million R)**	**D/E (%) (percent)**
SAIL	4.5	210	-5.3	230	-18.5	300
TIS	11.3	100	8.5	110	2.1	130
ESSAR	0.7	180	1.2	210	-24.9	290

Source: CMA India.

6-13. Profits and Debt-to-Equity Ratios of Three Indian Steel Producers

SAIL Bailout

The most telling example of recent direct government intervention is the restructuring package for government-owned SAIL. In February 2000, the Cabinet Committee on Economic Affairs approved a package of approximately $2.2 billion for the company's financial and business restructuring. While the financial package does not entail direct cash infusions, the government will provide SAIL with several valuable kinds of assistance:

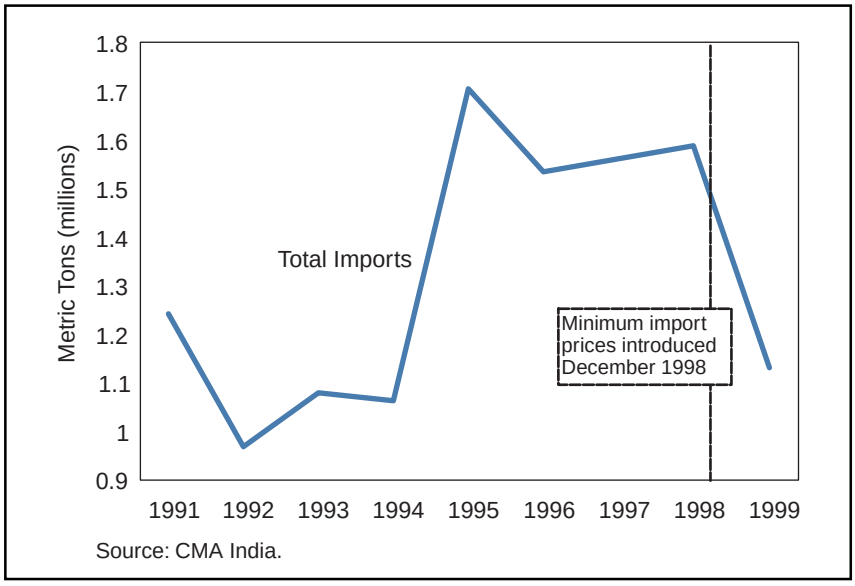
- A writeoff of about $1.14 billion in loans from the Steel Development Fund.[164]
- New government loans of about $86 million.
- Loan guarantees for private sector loans totaling about $67 million.
- Permission for SAIL to write off a $440 million loan advanced to its subsidiary, Indian Iron and Steel Company, and waive $114 million in interest on loans to that subsidiary that were previously written off.
- Guarantees for an additional $675 million in market financing; $337 million to finance SAIL's voluntary retirement scheme, and $337 million to service its current-year debt burden. [165]

Private Sector Response

Industry reaction to the SAIL bailout has been mixed. Private companies, including TISCO, are expected to ask for similar treatment.

Others have criticized the government's bailout of SAIL. The most vocal has been Indofer, an association of private steel producers including Ispat, Lloyds Steel, Essar Steel, and Jindal Steel. According to these companies, "The government decision to waive steel development fund loans is highly discriminatory and will put the company [SAIL] above the other major steel producers in the competitive market for financial resources."

The government's intervention may help SAIL not only maintain production, but increase it as well. SAIL faces intense domestic competition and needs to deal with mounting inefficiencies. This bailout largely obviates any motivation for SAIL to take the painful steps of downsizing and consolidation. As such, the bailout is not expected to help SAIL get back on its feet in the long term.[166] For the most part, private sector companies have generally refrained from harsh criticism of the bailout. Many of these companies maintain similarly high debt loads and may, themselves, seek similar kinds of government assistance.[167] Some industry groups, however, have been vocal in their opposition *(see box)*.[168]



6-14. Indian Imports of Steel, All Products

Import Barriers, Old and New

In late 1998, as the threat of low-priced imports increased, the government did not shy away from imposing temporary import measures to protect the domestic industry. These measures, along with existing import barriers, have contributed to a decline in imports of almost 35 percent from FY 1995 to FY 1999, bringing imports down below 5 percent of domestic consumption in FY 1999[169] *(Chart 6-14)*.

Import Floor Prices. The most notable government intervention was the imposition of a minimum floor price regime for steel imports. At the urging of the Ministry of Steel, the Ministry of Commerce in December 1998 specified floor prices for import of hot-rolled steel coils, cold-rolled steel coils, hot-rolled sheets, tin-plates, electrical sheets and alloy steel bars and rods. Imports of hot-rolled steel coils, for example, were allowed only if the minimum customs value was at least $254 per MT. [170] According to the Joint Plant Committee, "the basic purpose of [the] imposition of [a] floor price was to safeguard against dumping of steel at low prices due to [the] surplus scenario in [the] international market."[171]

Minimum prices on steel were withdrawn in January 2000 for primary products (excluding secondary materials such as scrap). However, domestic producers took the government to court, and the Calcutta High Court ruled that withdrawal of the minimum import prices was "not in the interest of the domestic industry." Thus, in February, minimum import prices for primary steel were reinstated.[172] While the Indian government is trying to reverse this ruling in the Supreme Court, pressure is mounting from domestic industry to leave the measure in place. The U.S. government is currently reviewing the consistency of this action with India's obligations under the WTO.[173]

Tariffs. High tariff rates also continue to insulate India's steel industry. While tariffs on steel have been reduced substantially over the last decade, they remain high compared to other developing countries[174]—currently averaging about 25 to 30 percent.

Surcharges. Starting in FY 1999–2000, a 10 percent surcharge has been added on top of the basic import duty.[175]

Administrative Hurdles. The administrative burden of importing steel to India has remained quite high. Customs procedures are extensive and cause frequent delays.

Export Subsidies—The Staple of Indian Government Assistance

Export subsidies have long influenced the business practices of Indian steel companies, and their importance is expected to grow along with the industry's growing emphasis on exports.[176] These complex programs and schemes use various licensing, duty and export financing mechanisms to subsidize exporting *(see box)*.[177] There are three specific examples:

- **Special Import Licenses (SILs) Program.**[178] Exporters and manufacturers that have attained certain export levels or that have met certain production quality standards are eligible to receive SIL equal to up to 25 percent of the value of their exports.[179] Companies can use licenses to import products from the Restricted List of Imports or sell the license for a premium equal to a percentage of its face value on the open market.[180]
- **Export Promotion of Capital Goods Scheme.** Firms that meet certain export obligations are eligible to import capital equipment at reduced duty rates.[181]
- **Duty Entitlement Passbook Scheme.** Government-designated manufacturers and exporters can claim credits on certain imported inputs and use the credits to pay customs duties on subsequent imports.[182] This program enables companies to import inputs without paying India's basic customs duty.

Legacy of Past Government Assistance

Under the freight equalization scheme, the huge transportation costs incurred by steel companies were paid by the government. As a result, production facilities were built near iron ore deposits, regardless of the location of the ultimate steel purchaser.

When this program was recently eliminated, steel producers had to bare the exorbitant cost of transporting steel throughout India. While not enough to alter production schedules, this added burden has come at a difficult time for producers already dealing with low domestic prices.

A number of such export programs were found to be unfair export subsidies by the U.S. government in a recent countervailing duty investigation of steel plate from India.[183]

Assessment: Problems and Some Possible Solutions

Indian steel producers have gone through one of their worst downturns in years, suffering from stagnant domestic demand and overcapacity. Through the first half of the 1990s, high growth masked a number of problems that are critical in a slower growth environment, including antiquated technology and low labor productivity. Now, the Indian steel sector is going through a period of change. In 1999, for the first time, production was curtailed in the face of weak demand and declining prices. SAIL took the lead by shutting down two blast furnaces, although they were relit in April 2000. Temporary slowdowns in production will not, of course, solve the problems of the steel sector. Given lackluster domestic demand in recent years, many companies plan to pursue export-oriented business strategies. It is also likely that the government will continue to actively support the domestic steel industry. As long as the government remains actively involved, there will be concerns that exports from India may not be fairly traded.

Continued Overcapacity

In the meantime, overcapacity will continue to result in increased inventories and reduced prices, and it will adversely affect profitability.[184] One source indicates that much of the new capacity added in recent years is nonviable and will only survive if long-term lenders write off large portions of debt.[185] This may lead private companies to look for the type of government intervention exemplified by the SAIL bailout package. Such measures, including debt-to-equity swaps, may clear the books of bad debt but do little to keep the debt problem from recurring.

By all accounts, the most promising strategy for addressing the overcapacity problem would be to more fully develop India's domestic steel demand. There are a number of standard uses for steel which India has not yet developed (*e.g.*, truck bodies are still constructed of wood, and scaffolding of bamboo). If India adopted these uses, domestic steel consumption would improve.[186] To this end, four private sector producers (Ispat, Essar, Jindal, and Lloyds) formed Indofer, a representative body intent on exploring avenues for increased domestic steel consumption. Representatives of the group have stated that they expect to increase domestic consumption by at least 2 million MT, using measures such as a ban on asbestos corrugated sheets to increase steel consumption in construction.[187]

Recently, domestic demand for steel in India picked up. Infrastructure development, a major use of steel, grew at an annual rate of almost 8 percent during the first four months of calendar year 2000.[188] Although overall demand is growing, it is not keeping pace with India's crude steel output, which grew by 12.5 percent during the first quarter of calendar year 2000.[189]

Technology and Labor Issues

Further exacerbating the precarious situation for steel producers is the continued use of antiquated technology. About 26 percent of India's steel continues to be made with highly inefficient open hearth furnaces, while only 40 percent is produced by continuous casting.[190] In order to become internationally competitive, the industry must modernize, especially older integrated producers. While some newer mills are producing high-end niche products, most Indian mills are inefficient. Even SAIL has its 11 million MT aggregate capacity spread across five integrated mills. Both SAIL and TISCO have recognized this problem and made plant modernization a top priority.[191]

Labor productivity is a major issue closely associated to technology. Total labor costs to produce a ton of steel in India are higher than those in either Japan or Korea,[182] given that the production process in India is much more labor intensive than that of the more developed producers. This translates into relatively low labor productivity numbers, especially for the major steel producers. SAIL and TISCO produced only 49 MT and 52 MT, respectively, per employee in FY 1998–1999.[193] In total, SAIL employed more than 175,000 workers in 1999, while TISCO employed about 60,000.

While labor is abundant and labor costs are low in India, high employment inhibits the major producers from rationalizing production and introducing new technologies. The steel industry in India employs an estimated 2 million people. As much as producers appear to want to reduce their labor forces through voluntary retirement schemes, they face stiff opposition from vocal and disruptive labor unions.[194] Labor, a very powerful force in India, is wholeheartedly opposed to streamlining the steel industry. Thus, it is unlikely that labor productivity will be improved any time in the near future.

Export Growth

While low product quality makes India's older producers uncompetitive, the new steel plants are poised to export a significant portion of their production given the higher quality of the products,[195] particularly of hot-rolled flat products. Many of India's steel producers, old and new, have targeted export markets as the principal source of

new sales growth.[196] By 1998, even before many of the new state-of-the-art steel plants had come on line, estimates indicate that India's finished steel exports had increased by more than 500 percent compared to 1991.[197] This trend is expected to continue in the coming years as even more capacity comes on line.[198] For example, according to U.S. Census data, U.S. imports of steel mill products in 1998 increased 106 percent compared to 1997. In 1999 imports from India increased again, up 46 percent from 1998. During the first five months of 2000, U.S. imports of steel mill products are up 187 percent compared to the same period in 1999.

With the government expected to continue assisting and protecting the steel industry, there is significant potential for India's market-distorting practices to disrupt global steel trade.