MARKET STUDY ON THE MEXICAN

IRON AND STEEL INDUSTRY

This market study has been prepared to assist Canadian firms interested in exporting to Mexico. While an effort has been made to examine the most important aspects of the sector, the study is not exhaustive. Companies will have to tailor their marketing approach according to their particular interests and circumstances.

Further assistance can be obtained by addressing requests directly to the Commercial Division of the Canadian Embassy in Mexico City located at Calle Schiller No. 529, Col. Polanco, 11580 Mexico, D.F., telephone (011-525) 254-3288, telex 177-1191 (DMCNME) and fax (011-525) 545-1769 (sending from Canada); or the Latin America and Caribbean Trade Division, External Affairs and International Trade Canada, 125 Sussex Drive, Ottawa, Ontario, K1A 0G2; phone (613) 996-8625; fax (613) 943-8806.

MARKET STUDY ON THE MEXICAN IRON AND STEEL INDUSTRY

INDEX

1. BACKGROUND

Mexico's iron reserves represent approximately 0.15% of the world's total reserves, or 700 million tons, and are found in 240 deposits within 21 states. The three largest, Las Truchas (Michoacán), Peña Colorada (Colima) and Cerro de Mercado (Durango), account for 65% of total reserves. All of these are incorporated to the national mining reserves and are considered property of the nation.

After having been under private ownership between 1907 and 1965, Siderúrgica Las Truchas, S.A. was created in 1969 with a 50% participation of the federal government, 25% of Nacional Financiera, a government owned development bank, 12.5% of Altos Hornos de México (AHMSA) and 12.5% of Ing. Bernardo Quintana. In 1971 the company was called Siderúrgica Lázaro Cárdenas - Las Truchas and a Mex$6,200 million pesos investment was authorized to install a major processing plant and the necessary infrastructure at the Las Truchas site.

Peña Colorada was not explored until 1957. In 1967 the Consorcio Minero Peña Colorada S.A. was created with the participation of AHMSA, Fierro Esponja, Tubos de Acero de México (TAMSA), Fundidora de Fierro y Acero Monterrey and the federal government. In 1968, the company was renamed (by including Benito Juárez in the name) and its capital was increased.

Cerro del Mercado is the oldest known deposit and was presumably already exploited in the 16th century. During the 19th century, a series of owners and companies took advantage of these deposits, and in 1900 the Compañía Fundidora de Fierro y Acero de Monterrey, S.A. was created and started operations in 1903.

Until recently, the Mexican steel industry was composed of five fully integrated steel plants, which accounted for 86% of total national production, and several smaller semi-integrated and non-integrated manufacturers. Of the five large companies, three were included in the government owned SIDERMEX (Mexican Steel) complex: Compañía Fundidora Monterrey (FMSA - 1903), Altos Hornos de México (AHMSA - 1942) and Siderúrgica Lázaro Cárdenas - Las Truchas (SICARTSA - 1976). Hojalata y Lámina (HYLSA - 1946) and Tubos de Acero de México (TAMSA - 1955) are the two fully integrated, privately owned producers.

In a major effort to restructure the parastate industry, and in particular the government owned steel industry, the Mexican government decided to reduce its participation in the sector by closing, merging, transfering or selling several companies. In 1986 Fundidora Monterrey was closed down, since it had major problems of technological obsolescence and therefore high production costs, which were translating into yearly losses. Government participation was also reduced in the associated companies, involved in other activities, such as distribution, transportation, real estate,

machinery manufacture, etc., many of which were unrelated to the steel industry. Only the companies producing raw materials (iron, coal, ferroalloys and refractories) were kept.

At the same time, in order to offset some of the reduction in production brought about by this closure, the SICARTSA II project was continued, allowing for modernization and increased efficiency of existing production and investment, while the modernization of AHMSA also advanced, with the help of a $700 million US dollar World Bank loan to SIDERMEX in 1989. During 1984 and 1989 a total of two billion dollars were invested in the parastate steel industry

Within the sector's reconversion program, on March 7, 1990, the government officially announced the deincorporation of AHMSA and SICARTSA on the grounds that government involvement in the steel industry is no longer a priority, since both private and international steel production can presently cover existing domestic demand at competitive prices. This is due to a general decrease in demand for steel in favor of other materials (plastic, aluminum, etc.) together with the reduction in the scale of production operations, which has allowed smaller firms to enter the market with smaller investments than were previously required. Because resources available to the federal government are limited, they are to be used in priority social projects and are infufficient to undertake the necessary investments to modernize the steel industry. The conditions under which the sale are to take place are that whoever acquires the firms should have an investment program and the necessary resources to undertake it in order to complete the modernization project begun by the government; and that worker rights in the industry be respected.

On August 2, 1990 the final sales decision was officially published, instructing the Ministry of Finance and Public Credit to determine which local bank is to be responsible for the sale. Japanese sources have reported that Nippon Steel Co. has been negotiating with the Mexican government to purchase SICARTSA, in which Japan has already invested $930 million US dollars since 1982. Other companies reported to be interested are Kobe Steel and Sumitomo Metal Industries, both of which have joint ventures with NKS and Productora Mexicana de Tubería, both related to the steel industry. Other companies are the Mexican Alfa group, other local firms and companies from West Germany and England.

2. ECONOMIC ENVIRONMENT

With the objective of reducing the inflation rate, the Mexican authorities implemented a stabilization program in 1988, called the Economic Solidarity Pact, which features traditional austerity measures, entailing tight fiscal and monetary policies and unorthodox measures, such as price, wage and exchange rate controls. This program has been the cornerstone of Mexico's economic policy over the past four years and has resulted in a

drastic reduction of the inflation rate, from an annual rate of 159.2% in 1987 to 51.7% in 1988 and 19.7% in 1989. Inflation rebounded to 29.9% in 1990 but the Mexican government aims to achieve a 14% inflation rate in 1991, which seems a reasonable estimate based on an annual inflation rate of 13.3% as of October 1991. Along with the objective of consolidating the progress made in price stabilization, Mexico's macroeconomic policy in the short run aims to reaffirm gradual and sustained economic recuperation, basically by establishing the necessary conditions to encourage national and foreign investment and by stimulating local demand.

After the 1986 recession, Mexico's gross domestic product (GDP) increased a moderate 1.7% in 1987 and an additional 1.3% in 1988. Domestic economic activity recovered for the third consecutive year in 1989 with a growth rate of 3.1% and further 3.9% in 1990 to reach $234 billion (1). With an 81.1 million population, per capita GDP was estimated at $2,874 in 1990. Additionally, manufacturing output grew by 5.2% in 1990 in real terms, private investment and consumption expanded 13.6% and 5.2% respectively and public investment was up 12.8%. During the 1991-1994 period GDP is expected to maintain an average annual growth rate of 2.5%-3%. Preliminary figures for 1991 place GDP growth at 4.5%-5% for this year.

In an effort to revitalize and open the Mexican economy, the Mexican Government undertook a series of structural changes, including the accession to the General Agreement on Tariffs and Trade (GATT) on August 24, 1986 leading to an extensive trade liberalization process: import permits were eliminated on all but 198 of the total 11,812 tariff items based on the Harmonized System adopted in 1988. Official import prices are no longer applicable, nor the 5% export development tax, and import duties were lowered from a maximum of 100% in 1982 to 20% since January 1988. The weighted average tariff rate is now 10.4%. The automotive and computer industries have also been liberalized, through the elimination of prior import permits, to allow free entry of products in these industries. The approval of the North American Free Trade Agreement will further strengthen trade between Canada, the United States and Mexico.

According to official data from the Mexican Secretariat of Commerce and Industrial Development (SECOFI), Mexico's trade balance in 1990 dropped once again to a $3 billion deficit from -$645 million in 1989. Exports increased by 17.5% in 1990, from $22.8 billion to $26.8 billion, while imports grew 27.3%, from $23.4 billion to $29.8 billion in 1990, having already increased 23.8% in 1989 and 54.9% in 1988. As of August 1991, total exports for the year amounted to $18.3 billion and imports to $23.6 billion.

---

1. Note: All values in this report, unless otherwise stated (Mexican pesos, Mex$, Canadian dollars, Cdn$, etc) are quoted in United States dollar equivalents.

Total Mexican imports from Canada increased 24% in 1989 and decreased 1.5% in 1990. Total Canadian exports to Mexico amounted to Cdn$594 million, while total Canadian imports from Mexico were valued at Cdn$1,730 million in 1990. According to Mexican figures, in 1989, 1.9% of Mexico's imports came from Canada, while 1.2% of its exports were to Canada. This makes Canada Mexico's fifth largest exporter and sixth largest importer.

3. MARKET ASSESSMENT

Total apparent consumption of equipment for the iron and steel industry amounted to $82.8 million in 1988, reflecting a 16% increase over 1987 levels. This was brought about by a general economic recovery and favorable international steel prices, which allowed the small foundries and steel mills to purchase new equipment to substitute obsolete machinery. No major projects were undetaken by the large integrated firms, in particular the Sidermex group, since it is in the process of being restructured. Its investments are limited to maintaining existing capacity through maintennace and repair projects. The absence of major investments was felt in a decrease of the equipment market to $55 million in 1989, as the smaller companies are reducing their level of purchases. Apparent consumption of equipment for the iron and steel industry grew again by 11.4% in 1990 to reach $61.3 million. This market is expected to increase slightly in 1991 but, as the sale of Sidermex is completed, major investments are expected to be made between 1992 and 1994, placing total purchases at $98.8 million by the latter year.

TABLE 1
APPARENT CONSUMPTION OF EQUIPMENT FOR THE IRON AND STEEL INDUSTRY
($000 dollars)

	1987	1988	1989	1990	1994p
Production	24,609	26,275	27,326	29,092	37,326
+ Imports	47,936	57,954	30,787	36,734	65,583
- Exports	999	1,438	3,067	4,527	4,114
TOTAL	**71,546**	**82,791**	**55,046**	**61,299**	**98,795**

Source: Import and export data by SECOFI; author's estimates.

Imports have played a paramount role in this industry. Although no reliable figures exist for the national production of machinery and equipment for this industry, based on trade interviews it is estimated that the imported share of the market fluctuates between

55% and 70%, depending on economic and trade conditions and the specific equipment needs. With Mexico's trade liberalization policies, imports increased significantly, from $47.9 million in 1987 to $58 million in 1988, but dropped again to $30.8 million in 1989 as a result of the general reduction in investments. In 1990, however, they experienced a 19.3% growth to reach $36.7 million.

The following table shows imports by category for the 1987-1990 period. It is interesting to note that almost all categories experienced a reduction in 1989, in particular casting equipment and other foundry equipment, parts for rolling mills and furnaces, while rolls for rolling mills increased significantly. Most of these categories grew again in 1990, in particular ingot moulds & ladles, casting machines, rolling mills and rolls and furnaces.

TABLE 2
IMPORTS OF EQUIPMENT FOR THE IRON AND STEEL INDUSTRY
($000 dollars)

	1987	1988	1989	1990
Converters	0	612.2	3.7	43.4
Ingot moulds & ladles	1,013.1	746.3	1,489.1	2,113.7
Casting machines	21,691.2	9,752.7	2,855.5	5,582.4
Other moulding eq.	468.3	151.6	466.4	504.6
Parts	4,359.1	1,027.1	80.9	36.6
Tube mills	1.2	6.8	1,354.7	943.0
Hot or hot/cold rolling mills	405.4	3,773.8	723.7	3,411.2
Cold rolling mills	0.4	43.1	177.5	2,578.3
Rolls	4,791.7	1,265.8	10,527.6	11,343.7
Parts for rolling mills	6,747.5	26,860.7	7,640.1	2,270.1
Furnaces	7,345.5	6,406.0	4,615.8	6,283.6
Parts furnaces	1,095.4	5,356.1	232.3	28.6
Slag transporters	17.6	1,951.7	619.3	1,595.0
TOTAL	**47,936.4**	**57,953.9**	**30,786.6**	**36,734.2**

Source: Import data by Secretaría de Comercio y Fomento Industrial

There are traditionally large year to year fluctuations in imports because the large expansion projects occur irregularly, depending on general economic conditions and availability of financing. At the same time, the long useful life of the equipment extends its purchasing cycle and translates into important purchases of parts for replacement, maintenance or upgrading of existing technology.

TABLE 3
CANADIAN TRADE WITH MEXICO OF EQUIPMENT FOR THE IRON AND STEEL INDUSTRY
(Cdn$000 dollars)

	EXPORTS TO MEXICO			IMPORTS FROM MEXICO		
	1988	1989	1990	1988	1989	1990
Furnaces	0	9	316	0	0	0
Parts for furnaces	239	241	0	0	0	0
Converters	0	47	0	0	0	0
Casting machines	0	63	0	0	0	0
Parts for moulds, etc.	88	51	18	0	0	0
Rolling mill rolls	0	0	0	231	0	0
Parts for rolling mills	9	26	0	0	0	92
Metal foundry boxes	30	0	2	0	0	0
TOTAL	**339**	**437**	**336**	**231**	**0**	**92**

Source: Statistics Canada - International Trade Division

Overall, the U.S. is the leading supplier of machinery and equipment for the iron and steel industry, with a 39% import market share. Brand loyalty is important in this industry because compatibility among various brands is usually limited and often causes users to be tied to a certain supplier throughout the length of the useful life for that equipment. Other major suppliers include Italy (16%), West Germany (14%), the Soviet Union (6%), Spain (6%), Japan (4%), Great Britain, France, Austria, Switzerland, Finland and Canada. Important competitive factors in this market are technological sophistication, equipment quality and reliability, price and financing terms, availability and speedy supply of parts for repair, maintenance or expansion, and a presence in the market to adequately provide for after-sales and engineering services.

4. END USERS

Mexico's steel production industry includes all five stages of production typically found in the operations of major, fully integrated, steel producers in other countries:

- concentration of iron ore and production of coke from coal;
- production of primary iron or fusion;
- production of pig iron and sponge iron;
- production of steel for lamination, casting or smelting;
- production of the final product in semi-finishing or finishing mills.

Firms in the industry are divided into three groups, according to the degree of transformation employed:

- Integrated producers carry out all five production processes;
- Semi-integrated firms begin with scrap or pig iron, fabricate raw steel and produce finished (rolled) products;
- Mill rollers produce finished products from steel ingots.

The Mexican steel industry is composed of four large, fully integrated manufacturers, 23 semi-integrated firms and 44 mill rollers with a total installed capacity of 11.6 million metric tons of steel, of which 58% are government owned.. Capacity utilization in 1990 was 78% as compared to 67% in 1989. Mexico is the second largest steel producer in Latin America after Brazil and the world's 21st. Total employment in the industry is of 62,000 persons, 43,000 blue collar workers and 19,000 employees. The sector's GDP accounts for 1.2% of total GDP and 5% of manufacturing GDP.

Total raw steel production reached an all time high of 8.7 million tons in 1990, reflecting an 11.1% increase over 1989 levels and a 26% increase over its all time low during the decade of 6.9 million tons in 1983. Steel production increased due to a general economic recovery and growing exports at favorable world prices. Ten month figures for 1991 place total steel production at 6.67 million tons, reflecting an 8.4% decrease as compared to the same period in 1990.

TABLE 4
MEXICAN STEEL PRODUCTION
(000 tons)

	1986	1987	1988	1989	1990
Steel	7,225	7,642	7,779	7,851	8,726
Pig iron	3,737	3,712	3,678	3,230	3,665
Sponge iron	1,420	1,551	1,686	2,148	2,525
FERROALLOYS	239	267	272	279	264
-Ferromagnesium	156	161	165	168	186
-Ferrosilicon	18	18	17	9	7
-Siliconmanganese	61	80	80	99	71
-Ferrochromium	3	6	9	3	0
-Other alloys	1	2	1	0	0

Source: Cámara Nacional del Hierro y el Acero (CANACERO)

Within the gradual modernization of Mexico's steel industry, an important feature is the displacement of obsolete technogies with more state-of-the-art technology. In this sense, open hearth production (Siemens Martin) has been reduced from 19% of total production in 1980 to only 8.2% in 1990. Electric arc furnaces (EAF) are utilized for 51% of production and basic oxygen furnaces

(BOF) for the remaining 41%. During the first ten months of 1991, BOF production has decreased 12.8%, EAF has increased 2.8%, while open hearth production decreased 56.5%. Their participation in total production is EAF 57%, BOF 39%, open hearth 4%.

Mexico will also be relying increasingly on natural gas and direct reduction technology, rather than on coke and coal consumption in the future. In 1990, of total basic materials, 40% were produced through direct reduction processes (sponge iron), reflecting a 18% increase, while blast furnace produced pig iron increased 13% to a 60% participation, as compared to 69% in 1980. During the first ten months of 1991, sponge iron production remained the same as during the same period in 1990, or 2.1 million tons, and pig iron decreased 20% to 2.5 million tons.

The four fully integrated steel plants accounted for 83.6% of total national production and 65% of employment in the industry. Of the four large companies, two are included in the government owned SIDERMEX (Mexican Steel) complex: Altos Hornos de México (AHMSA) and Siderúrgica Lázaro Cárdenas - Las Truchas (SICARTSA). Hojalata y Lámina (HYLSA) and Tubos de Acero de México (TAMSA) are the two fully integrated, privately owned producers and account for 27% of total production and 33% of production of the fully integrated firms. The following table shows production by firm between 1986 and 1990.

TABLE 5
TOTAL STEEL PRODUCTION BY FIRM
(000 tons)

	1986	1987	1988	1989	1990
AHMSA	2,868	3,086	3,083	2,862	3,096
SICARTSA I	1,192	1,190	1,131	925	1,147
SICARTSA II	-	0	0	411	655
FMSA	254	0	0	0	0
TOTAL SIDERMEX	**4,314**	**4,276**	**4,214**	**4,198**	**4,898**
HYLSA	1,582	1,662	1,710	1,812	1,875
TAMSA	233	485	540	468	503
NON INTEGRATED	1,096	1,219	1,315	1,373	1,429
TOTAL PRIVATE	**2,911**	**3,366**	**3,565**	**3,653**	**3,807**
GRAND TOTAL	**7,225**	**7,642**	**7,779**	**7,851**	**8,705**

Source: Cámara Nacional del Hierro y el Acero (CANACERO)

Forgings and castings reached a total production level of 80,000 tons in 1990, up 8.1% over the 74,000 tons of 1989. The production of primary finished products -rolled flat plate, rolled non-flat plate and seamless pipe- amounted to 5.9 million tons in 1989, reflecting a 5.7% decrease compared to 1988. In 1990 it increased

8.8% to 6.5 million tons. It is interesting to note that rolled flat plate products have decreased their overall participation from 48% in 1980 to 42% in 1990, in favor of rolled non-flat plate.

Production of rolled flat plate products has steadily increased at a 4.5% average annual rate since 1986 but has not yet been able to recover its 1985 level of 2.8 million tons. Rolled flats include sheet plate (20%), hot rolled plate (37%), cold rolled plate (40%) and tin plate (3%). Rolled flat plate is exclusively manufactured by AHMSA, which accounts for 61% of production, and HYLSA (39%). National demand for rolled flats has increased at a faster pace than production, at an average rate of 10.7% between 1986 and 1990, which has translated into rapidly increasing imports, from 197,000 tons in 1987 to 534,000 tons in 1990, while exports have decreased from 386,000 tons in 1988 to 169,000 in 1989.

Rolled non-flat plate production reached 3.4 million tons in 1990, 14.7% more than in 1989. Rolled non-flats include corrugated rods (48%), wire rod (28%), solid bars (10%), commercial shapes (7%) and structural shapes (7%). Rolled non-flat plate is manufactured by the non-integrated companies 39(%) -basically micro and mini steel companies (34%) and rolling mills (5%)- SICARTSA (25%), HYLSA (20%) and AHMSA (15%). Total consumption of rolled non-flats increased 7.4% in 1987, increased 2% in 1988, slightly decreased in 1989 and grew by 15.2% in 1990, averaging a higher growth than production for the same period. This deficit was met both by increased imports, from 178,000 tons in 1989 to 269,000 in 1990, and by reduced exports, from 452,000 in 1987 to 251,000 in 1990.

Seamless pipe manufacture had shown a very dynamic growth of 20.3% between 1986 and 1989 as a result of growing exports, but decreased 7% in 1990 as exports fell. The total production of seamless pipe, amounting to 330,000 tons in 1990, is exclusively made by TAMSA. Apparent consumption of seamless pipe has decreased at an average annual rate of 11.6% since 1985, due to a slack demand by the petroleum and construction industries. Exports have therefore increased from 43,000 tons in 1986 to 234,000 tons in 1990, while imports decreased from 45,000 tons in 1988 to 33,000 in 1990.

In the derived steel products subsector, a total production of 1.6 million tons was reached in 1990, reflecting a 4.8% increase as compared to 1989, as a result of an increased production of galvanized plate, seamed pipe and wire.

TABLE 5
TOTAL FINISHED AND DERIVED STEEL PRODUCTION
(000 tons)

	1986	1987	1988	1989	1990
FINISHED PRODUCTS					
Rolled flat plate	2,265	2,362	2,531	2,580	2,685
Rolled non-flat p.	3,116	3,310	3,335	3,006	3,447
Seamless pipe	208	282	341	355	330
TOTAL FINISHED	**5,589**	**5,954**	**6,207**	**5,941**	**6,462**
DERIVATIVE PRODUCTS					
Seamed pipe	339	401	374	367	374
Wire	645	741	716	652	735
Galvanized sheet	322	411	361	371	416
Tin plate	195	174	173	144	82
TOTAL DERIVATIVE	**1,501**	**1,727**	**1,624**	**1,534**	**1,607**

Source: Cámara Nacional del Hierro y el Acero (CANACERO)

The principal end users of steel mill products are the construction and capital goods industries, which may be characterized as being highly dependent upon the economic health of Mexico. Total apparent consumption of steel and its products therefore fell in 1982 and 1983 by close to 30% each year, recovered slightly in 1984 and 1985 and fell again in 1986 by 20%. Together with the country's economic recovery, steel consumption increased close to 8% between 1987 and 1990. This has been brought about by an 11% growth in the metal products and machinery industry (appliances, office equipment and furniture, measuring and control instruments, tools and equipment), a 34% increase of the automotive industry and a 2.5% recovery of the construction industry in. Preliminary figures for 1991 seem to indicate a further growth in the industry.

Although annual steel production has maintained a fairly constant level, fluctuating between 7 million and 8.7 million tons between 1980 and 1989, consumption has shown a rapid decrease, from 12.5 million tons in 1981 to 6.5 million in 1986. With Mexico's economic growth, consumption picked up again to reach 8.7 million tons in 1990, slightly below production levels. Having had a deficit between domestic demand and supply during the 1980-1985 period, Mexico has since then had a surplus. Due to this trend, Mexico has been exporting increasing amounts of steel and steel products, while at the same time increasing its imports.

Mexico's total steel exports were of 1.5 million tons in 1990, equivalent to $742 million, composed by $145 million of raw materials and semi-finished products and $597 million of finished products. The greatest increases in Mexican exports can be seen in finished products. While in 1980 only 1.2% of total finished

products were exported, in 1990 this proportion increased to 9.3%. Mexico's exports have since 1984 been limited by a quota system established with the U.S. through the VRA agreements. This has forced Mexico to seek less accessible markets in terms of distance, volume, price and trade conditions.

TABLE 6
EXPORTS OF STEEL AND STEEL PRODUCTS
(000 tons)

	1986	1987	1988	1989	1990
Ferroalloys	77	83	125	98	63
Other	120	181	82	245	480
TOTAL RAW MATERIALS & SEMI-FINISHED PROD	**197**	**264**	**207**	**343**	**543**
Flat products	446	339	386	286	169
Non-flat products	459	452	449	262	251
Seamed pipe	128	228	124	64	83
Seamless pipe	43	129	224	250	234
Other	51	144	307	214	187
TOTAL FINISHED	**1,127**	**1,292**	**1,490**	**1,076**	**924**
GRAND TOTAL	**1,324**	**1,556**	**1,697**	**1,419**	**1,467**

Source: Cámara Nacional del Hierro y el Acero (CANACERO)
Note: 1990 are preliminary figures

Total imports of steel products amounted to 1.1 million tons composed 48% by flat products, 24% of non-flat products and 28% of pipes and other items. This volume is equivalent to $900.6 million, reflecting a 23.4% increase as compared to 1989 and 148% as compared to 1987. Flat product imports have shown the largest increases, despite efforts of the domestic industry to satisfy demand.

TABLE 7
IMPORTS OF STEEL AND STEEL PRODUCTS
(000 tons)

	1986	1987	1988	1989	1990
Pig iron	10	9	25	167	45
Ferroalloys	3	4	6	12	20
Other	102	6	7	5	19
TOTAL RAW MATERIALS & SEMI-FINISHED PROD	**115**	**19**	**38**	**184**	**84**

	1986	1987	1988	1989	1990
Flat products	254	197	318	381	534
Non-flat products	105	98	114	178	269
Seamed pipe	25	6	24	31	25
Seamless pipe	28	18	45	33	33
Other	40	41	75	77	169
TOTAL FINISHED	**452**	**360**	**576**	**700**	**1,030**
GRAND TOTAL	**567**	**379**	**614**	**884**	**1,114**

Source: Cámara Nacional del Hierro y el Acero (CANACERO)
Note: 1990 are preliminary figures

Mexico's investments in the iron and steel industry, according to the Latin American Iron and Steel Institute (ILFA) by production units can be seen in the following Table.

TABLE 8
INVESTMENTS IN THE IRON AND STEEL INDUSTRY
($000 dollars)

	1984	1985	1986	1987	1988
Treatment of raw materials	34,942	33,492	7,864	6,521	11,551
Reduction	50,246	16,342	3,916	3,159	2,396
Steel milling & tapping	220,572	191,993	87,627	12,318	15,152
Rolling	52,246	64,506	9,594	36,528	29,225
Other	167,613	184,697	6,647	112,847	266,164
TOTAL	**525,619**	**491,030**	**118,648**	**171,373**	**324,488**

Source: Instituto Latinoamericano del Fierro y el Acero - Anuario Estadístico de la Siderurgia y Minería del Hierro en América Latina 1990.

The funding of these investments has significantly changed in the last few years. While in 1984, 30% of investment funds were from internal sources, this share increased to 76% in 1988. Foreign funding reduced its participation from 60% in 1984 to 8% in 1988. This is mostly due to the perceived increased risk of loans to Mexico by major foreign banks since the 1982 economic and foreign debt crisis, which has, since then, led to major debt restructuring programs and slight increases in foreign funding to Mexico. The remainder is funded by domestic external financing. At present, only 5% of total investment is funded in foreign currencies, as compared to 43% in 1984.

No major investments are to be undertaken in the near future since no expansions or new projects are to be undertaken until the sale of the steel giant is closed. After that time, major projects are expected to be undertaken in order to modernize and renew existing production processes and lines.

5. MARKET ACCESS

As a result of Mexico's accession to GATT, the Mexican government has gradually opened the economy to international markets. Tariffs have been lowered from a maximum 100% in 1983, to 20% since December, 1988. The official price system has been totally eliminated and import permits are required on only 198 of the total 11,812 items in the Mexican Harmonized Tariff System.

The import climate for iron and steel processing equipment has improved significantly as a result of this commercial liberalization. Maximum duty rates have been reduced to 20% and prior import permits are only required on imports of parts for switchboards and modems. Therefore, imports are subject to an ad valorem duty of maximum 20% assessed on the invoice value. In addition, a customs processing fee of 0.8% is assessed on the invoice value. A 10% value added tax (recently reduced from 15%) is then assessed on the cumulative value of both taxes in addition to the invoice value. Some manufacturers who use imported inputs for their products under a Mexican Government approved manufacturing plan may have the duty and/or VAT waived or rebated. Raw materials, intermediates and machinery for use in manufacturing or assembling products for export are generally eligible to be imported either duty free or under bond. Further information can be obtained from Mexican customs brokers or directly from Mexican Customs.

Formerly, in order to bid on tenders and sell to a government agency or decentralized company, foreign manufacturers required having a local resident agent and to have the foreign supplier registered and accepted by the Secretariat of Planning and Budgeting (Secretaría de Programación y Presupuesto - SPP). As of July 1991, the above requirement for prior registration with SPP has been eliminated.

The new procedures now in force require the foreign supplier to have a local agent or representative and it has to be registered through his local representative as an accepted supplier with each government ministry and/or decentralized agency according to the international tender requirements under review.

International tenders financed by the World Bank or the International Development Bank are open to all member countries of these institutions. More recently, the World Bank, where its credits are involved, has required that bid documents should also include an affidavit confirming that the Canadian company is a bona fide Canadian company with an official residence in Canada and that Canada is recognized as a contributing member to the World Bank.

There are no official metric requirements applicable to imports into Mexico. However, since the metric system of units is, by law, the official standard of weights and measures in Mexico, importers will usually require metric labeling for packaged goods, although the English system is also used. Dual labeling is acceptable. Imported products should be labeled in Spanish containing the following information: name of the product, trade name and address of the manufacturer, net contents, serial number of equipment, date of manufacture, electrical specifications, precautionary information on dangerous products, instructions for use, handling and/or product conservation and mandatory standards. Mexico adheres to the International System of Units (SI). Electric power is 60 cycles with normal voltage being 110, 220 and 400. Three phase and single phase 230 volt current is also available.

Prepared by:
Caroline Vérut for the
Canadian Embassy
Mexico City
September 1990
Updated December 1991

To call all telephone and fax numbers listed below from Canada, unless they are preceded by a different area code, dial 011-525 first, otherwise dial 011-52-(area) number.
NOTE: The information on companies not located in Mexico City was not confirmed.

APPENDIX I:
INDUSTRIAL CHAMBERS AND ASSOCIATIONS

ASOCIACION NACIONAL DE IMPORTADORES Y EXPORTADORES DE LA REPUBLICA MEXICANA (ANIERM)
IMPORTERS AND EXPORTERS
Monterrey 130
Col. 06700 Roma
México D.F.
Phone: 564-86-18 584-95-22
Fax: 584-53-17
Contact: Sr Ernesto Warnholtz
Presidente

CAMARA MINERA DE MEXICO
MINING CHAMBER
Sierra Vertientes 369
Col. Lomas de Chapultepec
11000 México D.F.
Tel. 540-6788
540-6990
Fax 540-6061
Contact: Ing. Jaime Lomelín - President

CAMARA NACIONAL DE LA INDUSTRIA DEL HIERRO Y DEL ACERO (CANACERO)
IRON AND STEEL CHAMBER
Amores 338
Col. del Valle
03199 México D.F.
Tel. 543-4443
Fax 687-0517
Contact: Ing. Felipe Cortés - President

CAMARA NACIONAL DE LA INDUSTRIA DE TRANSFORMACION (CANACINTRA)
TRANSFORMATION INDUSTRY CHAMBER
Av. San Antonio 256
Col. Ampliación Nápoles
03849 México D.F.
Tel. 563-3400
Fax 598-9467
Contact: Roberto Sánchez de la Vara - President

APPENDIX II:
USEFUL MEXICAN GOVERNMENT DECENTRALIZED AGENCIES

AHMSA INGENIERIA, S.A DE C.V.
Kepler 59
Col.Nueva Anzures
11590 México D.F.
Phone: 531-22-45 531-19-580
Fax: 2-06-45-06

Ing. Luis Avila Martínez
Director General
Phone: 254-61-98

Sr. Ernesto Magaña
Responsable de Adquisiciones
Phone: 250-86-32

PROCESADORA DE ACERO RASSINI, S.A. DE C.V.
Prolg. Francisco I. Madero S.N.
Col. Zona Industrial
25680 Cd. Frontera, COAH.
Phone: (863) 53-213 53-220
Fax: (863) 53-224

Ing. Jesús Martínez Campos
Director División Tubería
Phone: (863) 51-833 50-369

Ing. Antonio Alegría Escamilla
Gerente Administrativo
(Responsable de Adquisiciones)
Poniente 140 No. 590
Col. Industrial Vallejo
02300 México D.F.
Phone: 390-06-59

SECRETARIA DE ENERGIA, MINAS E INDUSTRIA PARAESTATAL (SEMIP)
Av. Insurgentes Sur 552
Col. Roma Sur
06769 México D.F.

Ing. Fernando Hiriart Balderrama
Secretario de Energía, Minas
e Industria Paraestatal
Piso 3
Phone: 564-97-89 564-97-90

Ing. Alfredo Elías Ayub
Subsecretario de Minas e Industria Básica
Piso 4
Phone: 564-96-41 564-96-40

Lic. Javier Vega Camargo
Director General de Asuntos Internacionales
Phone: 553-38-15 553-27-02

Lic. Mauricio Toussaint Ribot
Director General de Operación
Minerometalurgica
Phone: 553-91-70 553-91-45

Lic. Pedro Guillermo Hoth Bon-Vermeden
Director de Negociaciones Internacionales
Phone: 553-90-29

Lic. Miguel Angel Ugalde Aponte
Director de Inversiones y Suministros
Phone: 553-91-43

PRODUCTORA MEXICANA DE TUBERIA, S.A. DE C.V. (PMT)
Luz Saviñón 17
Col. del Valle
03100 México D.F.
Phone: 523-04-90 587-69-86
Fax: 687-69-76

Lic. Julio Scherer Ibarra
Administrador General
Phone: 536-18-58 536-17-56

Ing. Rutilo Cuazitl Villalbaso
Gerente de Adquisiciones
Phone: 536-16-47 536-19-15

APPENDIX III:
DISTRIBUTORS AND REPRESENTATIVES

ACEROS, FABRICACIONES Y MAQUILAS, S.A. DE C.V.
Carr. Agricultura Km. 3
66070 Saltillo, Coah.
Phone: (84) 443-23
Ing. Ulises González V.
Director General

ACEROS LOZANO, S.A.
Madero Oriente 3901
Col. Fierro
64590 Monterrey, N.L.
Phone: (83) 37-04-01 37-04-02
Contact: Lic. Maritza Lozano Chapa
Gerente General

ACEROS MONTERREY, S.A.
Peña Guerra 150
Col. Peña Guerra
66490 San Nicolás de los Garza, N.L.
Phone: (83) 53-53-53
Contact: C.P. Ramiro H. Garza Villarreal
Director General

ACEROS R.G.C., S.A.
Av. López Mateos 502 Norte
Col. Lagrange
66490 Sn. Nicolás de los Garza, N.L.
Phone: (83) 53-44-44
Contact: Ing. Adrián G. González Lozano
Director General

ACERO Y FLECHAS DEL CENTRO, S.A. DE C.V.
Filiberto Gómez 259
Centro Industrial
54030 Tlalnepantla, Mex.
Phone: 390-22-33
Fax: 390-23-00
Contact: José Paredes Villareal
Director General

ACERO ROLADO MEXICANO, S.A. DE C.V. (ACROMEX)
Durango 263 Piso 8
Col. Roma
06700 México D.F.
Phone: 511-67-45 51175-81
Fax: 511-81-41
Contact: Sr. Sada
Director General

CAMBRIDGE WIRE CLOTH COMPANY INTERNATIONAL, S.A. DE C.V.
Vía López Portillo, Km. 29,8
Col. Guadalupe Inn
55010 Ecatepec, Mex.
Phone: 875-49-22
Fax: 875-47-98
Contact: Edward N. Evans
Presidente

COMPAÑIA SIDERURGICA DE GUADALAJARA, S.A.
Lázaro Cárdenas 601
44960 Guadalajara, Jal.
Phone: (36)12-26-75
Fax:
Contact: Ing. Jorge Martínez Buitrón
Presidente

DELTA MEXICANA, S.A. DE C.V.
Francisco I. Madero 1010
Parque Industrial El Carmen
Phone: (83) 600-21
Contact: Lic. Jorge Humberto Padilla
Director General

DOFESA, S.A. DE C.V.
Marina Nacional 205
Col. Tacuba
11410 México D.F.
Phone: 527-93-47
Fax: 399-74-56
Contact: Jesús Hernández
Director General

FORDATH, S.A. DE C.V.
Vasconcelos 650 Oriente
Fracc. Valle del Campestre
66265 San Pedro Garza García, N.L.
Phone: (83)35-02-75
Fax: (83)78-72-67
Contact: Ing. Claudio V. Ramírez
Director General

FUNDICION DE FIERRO Y ACERO EUREKA, S.A.
Ciprés y Violeta 3102
Col. Moderna
Phone: (83) 51-06-44
Contact: Federico Gutiérrez
Director General

FUNDICION NARDO, S.A.
Poniente 146 No. 519
Fracc. Industrial Vallejl
07710 México D.F.
Phone: 587-51-00
Fax: 567-73-51
Contact: Juan J. Molina Segundo
Director General

FUNDICIONES PECOR, S.A. DE C.V.
Callejón Sto. Domingo 1117
Col. Lagrange
66400 Sn. Nicolás de los Garza, N.L.
Phone: (83) 50-07-72
Contact: Ing. Ramón Pérez Córdova
Director General

FUNDICIONES ALTZAIRU, S.A. DE C.V.
Hermenegildo Galeano 3
Col. Sn. Juan Ixhuatepec
54180 Tlalnepantla, Mex.
Phone: 781-91-89
Fax: 393-98-71
Contact: Iñaki Ertze Encinas
Director General

FUNDICION Y MAQUINADO DE QUERETARO, S.A. DE C.V.
Acceso II No. 18
Col. Industrial Benito Juárez
76130 Querétaro, Qro.
Phone: (463) 701-74
Fax: (463) 708-57
Contact: Eduardo Mainero Caballero
Director General

FUNDIDORA DE ACEROS TEPEYAC, S.A. DE C.V.
Vía Morelos 349
55400 Tulpetlac, Mex.
Phone: 569-30-22
Fax: 755-31-86
Contact: Ing. Oscar Michellod
Director General

FUNDIDORA VOLCAN, S.A. DE C.V.
Oriente 257 No. 86
Col. Agrícola Oriental
08500 México D.F.
Phone: 558-10-21
Fax: 558-04-75
Contact: Ing. Manuel Ruíz Ocejo
Director General

FUNDIVAL, S.A. DE C.V.
Jaime Balmes 11 - Edif.A - Plaza Polanco
Col. Chapultepec Morales
11510 México D.F.
Phone: 557-24-00
Fax: 557-59-60
Contact: Héctor Sánchez Madrid
Director General

GRUPO SIDENA S.A.
Homero 418-1
Col. Chapultepec Morales
11560 México D.F.
Phone: 203-78-41 203-77-57 2377-38
Fax: 203-78-77
Contact: Lic. Gonzálo Fernández
Director General

IMSA SIGNODE, S.A. DE C.V. (MEXICO)
Vía Dr. Gustavo Baz 43
Col. Xocoyohualco
54080 Tlalnepantla, Mex.
Phone: 562-21-90
Fax: 562-96-90
Contact: Ing. Vicente Marroquín Zepeda
Director General

IMSA SIGNODE, S.A. DE C.V. (MONTERREY)
Villagrán 1319 Norte
Col. Industrial
64440 Monterrey, N.L.
Phone: (83)74-33-11
Fax: (83)74-23-46
Contact: C.P. Homero Quiroga D.
Gerente General

LA PALOMA, CIA. DE METALES, S.A. DE C.V.
Sn. Luis Tlatilco 8
Parque Industrial Naucalpan
53370 Naucalpan, Mex.
Phone: 358-57-44
Fax: 576-36-45
Contact: Sr. José Nava Fuentes
Director General

MAFUSA, S.A. DE C.V.
Calz. del Valle 222 Poniente
Col. del Valle
66220 Monterrey, N.L.
Phone: (83)76-65-80 76-64-68
Fax:
Contact: Ing. Salvador Villamar Delgado
Gerente General

MANUFACTURAS INTERNACIONALES, S.A. DE C.V.
26 Norte 220
Cd. Industrial
20290 Aguascalientes, Ags.
Phone: (49)635-20 657-28
Fax: (49)676-65
Contact: Ing. Luis Francisco López Vázquez
Director General

MANUFACTURAS Y AGENCIAS UNIDAS, S.A. DE C.V.
Amores 1018
Col. del Valle
03100 México D.F.
Phone: 576-26-11
Fax: 358-50-27
Contact: Lic. Roberto Troop
Director General

METALUR MEXICO, S.A. DE C.V.
Eucken 16-302
Col. Anzures
11590 México D.F.
Phone: 531-68-21 250-42-63
Fax: 531-33-62
Contact: Lic. Carlos Núñez
Director General

METALES AGUILA, S.A. DE C.V.
Dr. Jiménez 268
Col. Doctores
06720 México D.F.
Phone: 538-65-20
Fax: 538-69-67
Contact: Ing. Hugo de Luca Monteverde
Director General

METAPOL, S.A. DE C.V.
Azahares 26-203
Col. Santa María Insurgentes
06430 México D.F.
Phone: 583-87-70
Fax: 583-05-57
Contact: Gregory Polak L.
Gerente General

***MEXINOX, S.A. DE C.V.**
Paseo de la Reforma 116 Piso 14
Col. Juárez
06600 México D.F.
Phone: 592-10-88
Fax:
Contact: Juan Autrique
Director General

MINER Y MENDEZ DE MEXICO, S.A. DE C.V.
Insurgentes Sur 2462
Col. Ermita Atizapán
01070 México D.F.
Phone: 548-94-70
Fax: 550-69-15
Contact: Lic. Felipe Zirión Quijano
Presidente

NUTEC, S.A. DE C.V.
Priv. San Jerónimo 225 Sur
Col. San Jerónimo
64650 Monterrey, N.L.
Phone: (83)48-88-88
Fax:
Contact: Geraro Cueva
Gerente General

REPRESENTACIONES PFEIFER, S.A DE C.V.
Vicente Suárez 13
Col. Condesa
06140 México D.F.
Phone: 553-90-39
Fax: 286-82-27
Contact: Enrique Kahn
Director General

PRODUCTOS CROSBY S.A. DE C.V.
Blvd. Manuel Avila Camacho 235-C
Col. Sn. Francisco Cuatlalpan
53370 Naucalpan, Mex.
Phone: 576-17-66
Fax: 576-51-74
Contact: Lic. Xavier Saavedra
Director General

***PRODUCTORA INDUSTRIAL, S.A. DE C.V.**
Ingenieros Militares 4
Col. Sn. Francisco Cuautlalpan
53560 Naucalpan, Mex.
Phone: 576-09-33
Fax: 358-63-62
Contact: Javier Lee Kim
Gerente General

***PRODUCTORA MEXICANA DE TUBERIA, S.A. DE C.V.**
Av. Insurgentes Sur 664, Piso 11
Col. del Valle
03100 México D.F.
Phone: 523-04-90
Fax:
Contact: Ing. Emilio Zorrilla V.
Director General

PRODUCTOS ESPECIALES METALICOS, S.A. DE C.V.
Vía José López Portillo 8A
Col. Lechería
54940 tultitlán, Mex.
Phone: 565-86-55
Fax: 872-31-39
Contact: Ing. Tony Martí
Director General

RESCANDI, S.A. DE C.V.
parque de los Remedios 6-301
Col. El Parque
53390 Naucalpan, Mex.
Phone: 576-39-61
Fax: 359-43-19
Contact: Ulf Bergstrom
Gerente General

SERVICIOS INDUSTRIALES, S.A. DE C.V.
Río de la Plata 48
Col. Cuauhtémoc
06500 México D.F.
Phone: 286-81-33
Fax: 286-71-47
Contact: Ing. Jaime Lomelín G.
Director General

SIDERURGICA TULTITLAN, S.A. DE C.V.
Av. Nuevo León 250-7
Col. Condesa
06100 México D.F.
Phone: 272-02-87
Fax: 272-62-97
Contact: Israel Feldman
Director General

TROQUELADOS INDUSTRIALES DE PRECISION, S.A. (TIPSA)
Blvd. Adolfo López Mateos 21
Col. México Nuevo
54500 López Mateos, Mex.
Phone: 397-35-66
Fax: 822-94-11
Contact: George Lauprecht
Director General

TUBACERO, S.A.
Av. Guerrero 3729 Nte.
Col. del Norte
64500 Monterrey, N.L.
Phone: (83) 51-81-00
Fax: (83) 51-35-50
Contact: Felipe Avila Marcue
Director General

TUBERIA LAGUNA, S.A DE C.V.
Valle del Guadiana 355
Parque Industrial
35070 Gómez Palacio, Dgo.
Phone: (17) 16-79-28
Fax: (17) 12-24-66
Contact: Jaime Gutiérrez Pesquera
Director General

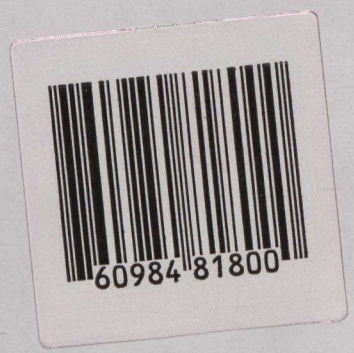
TUBERIA NACIONAL, S.A.
Diego Díaz de Berlanga 1002
Col. Valle del Nogalar
66480 San Nicolás de los Garza, N.L.
Phone: (83) 51-62-47
Fax: (83) 51-8-50
Contact: Guillermo Morcos
Director General

TUBOS DE ACERO DE MEXICO, S.A.
Campos Eliseos 400
Col. Chapultepec Polanco
11000 México D.F.
Phone: 202-00-03
Fax: 202-20-50
Contact: Ing. Luis Bossi
Director General

TUBOS DE ESTAÑO, S.A. DE C.V.
Oriente 174 No. 443
Col. Moctezuma
15500 México D.F.
Phone: 571-38-22
Fax: 785-26-71
Contact: Humberto Mestre Martínez
Director General

TUERCAS Y CANDADOS, S.A.
Av. Dr. J.E. González 280-A Sur
64640 Monterrey, N.L.
Phone: (83)46-44-00 46-44-04
Fax: (83)51-96-47
Contact: Ing. Roberto Rodríguez T.
Director de Operaciones

WEBELMAN HERMANOS, S.A. DE C.V.
Lafayette 55
Col. Nueva Anzures
11590 México D.F.
Phone: 250-85-87 254-37-11
Fax: 531-00-70
Contact: Eduardo Webelman
Presidente


60984 81800

ACCO®

ACCOPRESS

YELLOW	25970	JAUNE
BLACK	25971	NOIR
BLUE	25972	BLEU
RL BLUE	25973	BLEU RL
GREY	25974	GRIS
		VERT


0 50505 25971 7