Ternium S.A.
Form 20-F
April 16, 2019

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F

(Mark One)
o Registration statement pursuant to Section 12(b) or 12(g) of the Securities Exchange Act of 1934

or

x Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2018

or

o Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

or

o Shell company report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Commission file number: 001-3132734

TERNIUM S.A.
(Exact name of Registrant as specified in its charter)

N/A
(Translation of Registrant's name into English)

Grand Duchy of Luxembourg
(Jurisdiction of incorporation or organization)

29, Avenue de la Porte-Neuve – 3rd floor
L-2227 Luxembourg
(Address of principal executive offices)

Alejandra Hryszkiewicz
29, Avenue de la Porte-Neuve – 3rd floor
L-2227 Luxembourg
Tel. +352 26 68 31 52, Fax. +352 26 53 83 49, e-mail: luxembourg@ternium.com
(Name, Telephone, E-Mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange On Which Registered
American Depositary Shares	New York Stock Exchange
Ordinary Shares, par value $1.00 per share	New York Stock Exchange*

*Ordinary shares of Ternium S.A. are not listed for trading but only in connection with the registration of American Depositary Shares which are evidenced by American Depositary Receipts.

Securities registered or to be registered pursuant to Section 12(g) of the Act:
None
Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.
2,004,743,442 ordinary shares, par value $1.00 per share
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No o
If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes o No x
Note – checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer x	Accelerated Filer o	Non-accelerated filer o
		Emerging growth company o

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act. o
†The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.
Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP o	International Financial Reporting Standards as issued by the International Accounting Standards Board x	Other o

If "Other" has been checked in response to the previous question indicate by check mark which financial statement item the registrant has elected to follow. Item 17 o Item 18 o
If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x
Please send copies of notices and communications from the Securities and Exchange Commission to:

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TABLE OF CONTENTS

CERTAIN DEFINED TERMS

In this annual report, unless otherwise specified or if the context so requires:

- References to the "Company" are exclusively to Ternium S.A., a Luxembourg public limited liability company (société anonyme);
- References in this annual report to "Ternium," "we," "us" or "our" are to Ternium S.A. and its consolidated subsidiaries;
- References to the "Ternium companies" are to the Company's manufacturing subsidiaries, namely Ternium México S.A. de C.V., or "Ternium Mexico," a Mexican corporation; Ternium Brasil Ltda., or "Ternium Brasil" (formerly, CSA Siderúrgica do Atlântico Ltda., or CSA), a Brazilian corporation; Ternium Argentina S.A., or "Ternium Argentina", (formerly Siderar S.A.I.C., or Siderar), an Argentine corporation; Ternium Colombia S.A.S., or "Ternium Colombia", (formerly Ferrasa S.A.S., or Ferrasa), a Colombian corporation; Ternium del Atlántico S.A.S., or "Ternium del Atlántico"), a Colombian corporation; Ternium Internacional Guatemala S.A., or "Ternium Guatemala," a Guatemalan corporation; Ternium USA Inc., or "Ternium USA", a Delaware corporation; Las Encinas S.A. de C.V., or "Las Encinas," a Mexican corporation; and Consorcio Minero Benito Juárez Peña Colorada S.A. de C.V., or "Consorcio Peña Colorada," a Mexican corporation, and their respective subsidiaries;
- References to "Tenaris" are to Tenaris S.A., a Luxembourg public limited liability company (société anonyme) and a significant shareholder of the Company;
- References to "San Faustin" are to San Faustin S.A., a Luxembourg corporation and the Company's indirect controlling shareholder;
- References to "Exiros" are to Exiros B.V., a Dutch corporation, and its subsidiaries under the brand "Exiros"
- References to "Tecpetrol" are to Tecpetrol International S.A., a wholly owned subsidiary of San Faustin;
- References to "Tenigal" are to Tenigal S.R.L. de C.V., a Mexican company, 51% owned by Ternium and 49% owned by Nippon Steel & Sumitomo Metal Corporation, or NSSMC;
- References to "Usiminas" are to Usinas Siderúrgicas de Minas Gerais S.A. – USIMINAS, a Brazilian corporation in which we own a total of 242.6 million ordinary shares and 8.5 million preferred shares, representing 20.5% of Usiminas' capital. For further information on our investment in Usiminas, see Item 4. "Information on the Company—C. Organizational Structure—Other Investments-Usiminas" and note 14 to our consolidated financial statements included elsewhere in this annual report;
- References to "ADSs" are to the American Depositary Shares, which are evidenced by American Depositary Receipts, or ADRs;
- References to "finished steel products" when used in connection with production capacity are to finished steel products and semi-finished steel products intended to be sold to third parties;
- References to "tons" are to metric tons; one metric ton is equal to 1,000 kilograms, 2,204.62 pounds or 1.102 U.S. (short) tons;
- References to "billions" are to thousands of millions, or 1,000,000,000; and
- References to "Ternium Investments" are to Ternium Investments S.à r.l., a Luxembourg private limited liability company (société à responsabilité limitée), and a wholly owned subsidiary of the Company.

PRESENTATION OF CERTAIN FINANCIAL AND OTHER INFORMATION

Accounting Principles

We prepare our consolidated financial statements in conformity with International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Board ("IASB"), and adopted by the European Union ("EU"). IFRS differs in certain significant respects from generally accepted accounting principles in the United States, commonly referred to as U.S. GAAP.

This annual report includes our audited consolidated financial statements for the years ended December 31, 2018, 2017 and 2016.

Currencies

In this annual report, unless otherwise specified or the context otherwise requires:

- "dollars," "U.S. dollars," "USD", "US$" or "$" each refers to the United States of America dollar;
- "Mexican pesos" or "MXN" each refers to the Mexican peso;
- "Argentine pesos" or "ARS" each refers to the Argentine peso; and
- "Brazilian reais" or "BRL" each refers to the Brazilian real.
- "Colombian pesos" or "COP" each refers to the Colombian peso.

On December 31, 2018, the U.S. dollar sell exchange rate in Mexico (as published by Banco de México, the Mexican central bank) was MXN19.65=$1.00; the U.S. dollar sell exchange rate in Brazil (as published by Banco Central do Brasil, the Brazilian central bank) was BRL3.87=$1.00; the U.S. dollar sell exchange rate in Argentina (as published by Banco Central de la República Argentina, the Argentine central bank) was ARS37.70=$1.00; and the U.S. dollar average exchange rate in Colombia (as published by Banco de la República, the Colombian central bank) was COP3,249.75=$1.0000. Those rates may differ from the actual rates used in preparation of the Company's consolidated financial statements. We do not represent that any of these currencies could have been or could be converted into U.S. dollars or that U.S. dollars could have been or could be converted into any of these currencies.

Rounding; Comparability of Data

Certain monetary amounts, percentages and other figures included in this annual report have been subject to rounding adjustments. Accordingly, figures shown as totals in certain tables may not be the arithmetic aggregation of the figures that precede them, and figures expressed as percentages in the text may not total 100% or, as applicable, when aggregated may not be the arithmetic aggregation of the percentages that precede them.

Industry Data

Unless otherwise indicated, industry data and statistics (including historical information, estimates or forecasts) in this annual report are contained in or derived from internal or industry sources believed by Ternium to be reliable. Industry data and statistics are inherently predictive and are not necessarily reflective of actual industry conditions. Such statistics are based on market research, which itself is based on sampling and subjective judgments by both the researchers and the respondents, including judgments about what types of products and transactions should be included in the relevant market. In addition, the value of comparisons of statistics for different markets is limited by many factors, including that (i) the markets are defined differently, (ii) the underlying information was gathered by different methods and (iii) different assumptions were applied in compiling the data. Such data and statistics have not been independently verified, and the Company makes no representation as to the accuracy or completeness of such data or any assumptions relied upon therein.

Our Internet Site Is Not Part of this Annual Report

We maintain an Internet site at www.ternium.com. Information contained in or otherwise accessible through this website is not a part of this annual report. All references in this annual report to this Internet site are inactive textual references to this URL, or "uniform resource locator" and are for your informational reference only. We assume no responsibility for the information contained on this website.

CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This annual report and any other oral or written statements made by us to the public may contain “forward-looking statements” within the meaning of and subject to the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995 and under applicable securities laws. This annual report contains forward-looking statements, including with respect to certain of our plans and current goals and expectations relating to Ternium’s future financial condition and performance, which are provided to allow potential investors the opportunity to understand management’s beliefs and opinions in respect of the future so that they may use such beliefs and opinions as one factor in evaluating an investment in Ternium’s securities.

Sections of this annual report that by their nature contain forward-looking statements include, but are not limited to, Item 3. “Key Information,” Item 4. “Information on the Company,” Item 5. “Operating and Financial Review and Prospects” and Item 11. “Quantitative and Qualitative Disclosures about Market Risk.”

We use words such as “aim,” “will continue,” “will likely result,” “contemplate,” “seek to,” “future,” “objective,” “goal,” “sho pursue,” “anticipate,” “estimate,” “expect,” “project,” “intend,” “plan,” “believe” and words and terms of similar substance to i forward-looking statements, but they are not the only way we identify such statements. All forward-looking statements are management’s present expectations of future events and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. These factors include the risks related to our business discussed under Item 3. “Key Information—D. Risk Factors,” and among them, the following:

- uncertainties about the behavior of steel consumers in the markets in which Ternium operates and sells its products;
- changes in the pricing environments in the countries in which Ternium operates;
- the impact in the markets in which Ternium operates of existing and new competitors whose presence may affect Ternium’s customer mix, revenues and profitability;
- increases in the prices of raw materials, other inputs or energy, or other events affecting supply and demand of raw materials, other inputs or energy, such as the events following the collapse of a tailings dam at a mine in Brumadinho, Brazil;
- the policies of, and the economic, political and social developments and conditions in, the countries in which Ternium owns facilities or other countries which have an impact on Ternium’s business activities or investments;
- inflation or deflation and foreign exchange rates in the countries in which Ternium operates;
- volatility in interest rates;
- the performance of the financial markets globally and in the countries in which Ternium operates;
- the uncertainties associated with the performance of our investment in Usiminas (including those concerning the operating and financial performance of Usiminas and the Brazilian economy in general and the trading price of Usiminas’ ordinary and preferred shares);
- changes in domestic and foreign laws and regulations, including changes relating to tax, trade and foreign exchange matters, or the imposition of tariffs, quotas or other trade barriers;
- regional or general changes in asset valuations;
- uncertainties as to the result of our iron ore exploration activities or the successful exploitation of our mines;
- our ability to successfully implement our business strategy or to grow through acquisitions, greenfield and brownfield projects, joint ventures and other investments; and
- other factors or trends affecting the steel and mining industries generally and our financial condition in particular.

By their nature, certain disclosures relating to these and other risks are only estimates and could be materially different from what actually occurs in the future. As a result, actual future gains or losses that may affect Ternium's financial condition and results of operations could differ materially from those that have been estimated. You should not place undue reliance on the forward-looking statements, which speak only as of the date of this annual report. Except as required by law, we are not under any obligation, and expressly disclaim any obligation, to update or alter any forward-looking statements, whether as a result of changes of circumstances or management's estimates or opinions, new information, future events or otherwise.

PART I

Item 1. Identity of Directors, Senior Management and Advisers

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

A. Selected Financial Data

The selected consolidated financial data set forth below have been derived from our consolidated financial statements for each of the years and at the dates indicated herein. The consolidated financial statements for the years 2018, 2017 and 2016 are included in this annual report, and the consolidated financial statements for the years 2015 and 2014 are not included in this annual report.

Our consolidated financial statements were prepared in accordance with IFRS, and were audited by PricewaterhouseCoopers, société coopérative, Cabinet de révision agréé, or "PwC Luxembourg," an independent registered public accounting firm that is a member firm of the PwC International Ltd. network.

For a discussion of the currencies used in this annual report, exchange rates and accounting principles affecting the financial information contained in this annual report, see "Presentation of Certain Financial and Other Information—Accounting Principles" and "Currencies".

Selected consolidated income statement data	For the year ended December 31,				
In thousand U.S. dollars (except number of shares and per share data)	2018	2017	2016	2015	2014
Net sales	11,454,807	9,700,296	7,223,975	7,877,449	8,726,057
Cost of sales	(8,483,328)	(7,403,025)	(5,384,390)	(6,477,272)	(6,925,169)
Gross profit	2,971,479	2,297,271	1,839,585	1,400,177	1,800,888
Selling, general and administrative expenses	(876,764)	(824,247)	(687,942)	(770,292)	(816,478)
Other operating income (expenses), net	13,656	(16,240)	(9,925)	9,454	71,751
Operating income	2,108,371	1,456,784	1,141,718	639,339	1,056,161
Finance expense	(131,172)	(114,583)	(89,971)	(89,489)	(117,866)
Finance income	21,236	19,408	14,129	7,981	7,685
Other financial (expenses) income, net	(69,640)	(69,915)	37,957	(17,922)	40,731
Equity in earnings (losses) of non-consolidated companies (1)	102,772	68,115	14,624	(272,810)	(751,787)
Profit before income tax expense	2,031,567	1,359,809	1,118,457	267,099	234,924
Income tax expense	(369,435)	(336,882)	(411,528)	(207,320)	(339,105)
Profit (loss) for the year	1,662,132	1,022,927	706,929	59,779	(104,181)
Attributable to:					
Owners of the parent	1,506,647	886,219	595,644	8,127	(198,751)
Non-controlling interest	155,485	136,708	111,285	51,652	94,570
Profit (loss) for the year	1,662,132	1,022,927	706,929	59,779	(104,181)
Depreciation and amortization	589,299	474,299	406,890	433,788	414,797
Weighted average number of shares outstanding (2)	1,963,076,776	1,963,076,776	1,963,076,776	1,963,076,776	1,963,076,776
Basic earnings (losses) per share ($)(3)(4)	0.77	0.45	0.30	—	(0.10)
Basic earnings (losses) per ADS ($)(3)(4)	7.67	4.51	3.03	0.04	(1.01)
Dividends paid per share ($)	0.120	0.110	0.100	0.090	0.090
Dividends paid per ADS ($)	1.20	1.10	1.00	0.90	0.90

(1) Equity in earnings (losses) of non-consolidated companies include write-downs of our investment in Usiminas, as a result of the performance of impairment tests, of $739.8 million in 2014, and $191.9 million in 2015, with no write-downs in 2016, 2017 and 2018.

(2) Of the 2,004,743,442 shares issued as of December 31, 2018, the Company held 41,666,666 that were repurchased from Usiminas on February 15, 2011. Such shares were not considered outstanding for purposes of the calculation of the weighted average number of shares.

(3) International Accounting Standard N° 1 (IAS 1) (revised) requires that income for the year as shown in the income statement includes the portion attributable to non-controlling interest. Basic earnings per share and basic earnings per ADS, however, continue to be calculated on the basis of income attributable solely to the owners of the parent.

(4) Diluted earnings per share and per ADS (expressed in $ per share or ADS), equals basic earnings per share or ADS, respectively.

Selected consolidated balance sheet data In thousand U.S. dollars (except number of shares and per share data)	At December 31, 2018	2017	2016	2015	2014
Non-current assets	8,121,824	7,727,283	5,622,556	5,480,389	6,341,290
Property, plant and equipment, net	5,817,609	5,349,753	4,135,977	4,207,566	4,481,027
Other non-current assets(1)	2,304,215	2,377,530	1,486,579	1,272,823	1,860,263
Current assets	4,426,038	4,395,283	2,700,314	2,582,204	3,348,869
Cash and cash equivalents	250,541	337,779	183,463	151,491	213,303
Other current assets(2)	4,173,348	4,054,741	2,506,603	2,419,046	3,120,810
Non-current assets classified as held for sale	2,149	2,763	10,248	11,667	14,756
Total assets	12,547,862	12,122,566	8,322,870	8,062,593	9,690,159
Capital and reserves attributable to the owners of the parent(3)	6,393,255	5,010,424	4,391,298	4,033,148	4,697,201
Non-controlling interest	1,091,321	842,347	775,295	769,849	937,502
Non-current liabilities	3,236,756	3,442,521	1,324,785	1,558,979	1,964,070
Borrowings	1,637,101	1,716,337	396,742	607,237	900,611
Deferred tax liabilities	474,431	513,357	609,004	609,514	670,523
Other non-current liabilities	1,125,224	1,212,827	319,039	342,228	392,936
Current liabilities	1,826,530	2,827,274	1,831,492	1,700,617	2,091,386
Borrowings	399,856	1,505,570	821,893	913,786	1,264,208
Other current liabilities	1,426,674	1,321,704	1,009,599	786,831	827,178
Total liabilities	5,063,286	6,269,795	3,156,277	3,259,596	4,055,456
Total equity and liabilities	12,547,862	12,122,566	8,322,870	8,062,593	9,690,159
Number of shares(3)	1,963,076,776	1,963,076,776	1,963,076,776	1,963,076,776	1,963,076,776

(1) Includes goodwill mainly related to the acquisition of our Mexican subsidiaries for a total amount of $662.3 million as of December 31 of each year.

(2) As of December 31, 2018, 2017, 2016, 2015 and 2014, includes financial assets with maturity of more than three months for a total amount of $44.5 million, $132.7 million, $144.9 million, $237.2 million and $150.0 million, respectively.

(3) The Company’s share capital as of December 31, each year was represented by 2,004,743,442 shares, par value $1.00 per share, for a total amount of $2,004.7 million. Of the 2,004,743,442 shares, as of December 31, 2018, the Company held 41,666,666, repurchased from Usiminas on February 15, 2011.

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

You should carefully consider the risks and uncertainties described below, together with all other information contained in this annual report, before making any investment decision. Any of these risks and uncertainties could have a material adverse effect on our business, financial condition and results of operations, which could in turn affect

the price of the Company’s shares and ADSs.
Risks Relating to the Steel Industry
A downturn in global or regional economic activity would cause a reduction in worldwide or regional demand for steel and would have a material adverse effect on the steel industry and Ternium.
Steel demand is sensitive to trends in cyclical industries, such as the construction, automotive, appliance and machinery industries, which are significant markets for Ternium’s products and are also affected by national, regional

or global economic conditions. A downturn in economic activity would reduce demand for steel products. This would have a negative effect on Ternium's business and results of operations. A recession or depression affecting developed economies (such as the global downturn in 2008 and 2009 and the downturn in Europe in 2012), or slower growth or recessionary conditions in emerging economies (such as the slowdown being experienced by the Chinese economy or the recent recession in Brazil and the current recession in Argentina) would exact a heavy toll on the steel industry and adversely affect our business and results of operations.

A protracted fall in steel prices would have a material adverse effect on the results of Ternium, as could price volatility.

Steel prices are volatile and are sensitive to trends in steel demand and raw material costs, such as iron ore and metallurgical coal costs. Historically, the length and nature of business cycles affecting steel demand and raw material costs have been unpredictable. For example, steel prices in the international markets showed an upward trend, in a context of stronger steel demand and higher raw material costs, between the second half of 2009 and the first quarter of 2011. Thereafter, steel prices followed a downward trend, accelerating during 2015 and reaching new multi-year lows at the beginning of 2016, reflecting a slowdown in steel demand and a sharp reduction in steel production costs. During the rest of 2016 and 2017, steel prices again showed an upward trend as a result of higher industry steel production costs and improved steel demand, and in 2018 fluctuated at relatively high levels. A new fall in steel prices could adversely affect Ternium's operating results by means of lower revenues and could also lead to inventory write-downs.

Even if raw material costs decrease in sync with steel prices, the resulting decrease in steel production costs would take several months to be reflected in our operating results as the company would first consume older inventories acquired prior to such raw material cost decrease. In addition, we may be unable to recover, in whole or in part, increased costs of raw materials and energy through increased selling prices on our products, or it may take an extended period of time to do so.

Regional or worldwide excess steel production capacity may lead to unfair trade practices in the international steel markets and/or to intense competition, hampering Ternium's ability to sustain adequate profitability.

In addition to economic cycles, the steel industry can also be affected by regional or worldwide production overcapacity. Historically, the steel industry has suffered, especially on downturn cycles, from substantial over-capacity. As a result of a slowdown in steel demand growth and protracted increase in steel production capacity in the last decade, there are signs of over-capacity in all steel markets, particularly in China, which impacted the profitability of the steel industry and Ternium. Although steel industry profitability improved in 2017, excess steel production capacity may require several years to be absorbed by demand and, as a consequence, may contribute to an extended period of depressed margins and industry weakness. International trade of steel products conducted under unfair conditions increases particularly during downturn cycles and as a result of production over-capacity. Unfair trade practices may result in the imposition by some countries (that are significant producers and consumers of steel) of antidumping and countervailing duties or other trade measures, and may cause fluctuations in international steel trade. The imposition of such trade remedies or temporary tariffs on major steel exporters in significant steel producing countries could in turn exacerbate pressures in other markets, including Ternium's, as these exporters target such other markets to compensate, at least partially, for the loss of business resulting from the imposition of trade remedies.

China is the largest steel producing country in the world, accounting for approximately half of worldwide steel production. In 2014 and 2015, China's steel consumption decreased and Chinese exports expanded rapidly as a result. Consequently, Chinese exports of steel products, including exports to Europe, the United States and Mexico, were subject to several antidumping and countervailing investigations, and to the imposition of antidumping and countervailing duties and other trade measures. A decrease in steel consumption in China in the future could stimulate aggressive Chinese steel export offers, exerting downward pressure on sales and margins of steel companies operating in other markets and regions, including those in which Ternium operates. Similarly, a downturn in global or regional economic activity could stimulate unfair steel trade practices and, accordingly, may adversely affect our business and results of operations. For further information, see Item 4. "Information on the Company—B. Business Overview—Regulations—Trade Regulations."

Sales may fall as a result of fluctuations in industry inventory levels.

Inventory levels of steel products held by companies that purchase Ternium's products can vary significantly from period to period. These fluctuations can temporarily affect the demand for Ternium's products, as customers draw from existing inventory during periods of low investment in construction and other industry sectors that purchase Ternium's products and accumulate inventory during periods of high investment and, as a result, these companies may not purchase additional steel products or maintain their current purchasing volume. Accordingly, Ternium may not be able to increase or maintain its current levels of sales volumes or prices.

Intense competition could cause Ternium to lose its share in certain markets and adversely affect its sales and revenues.

The market for Ternium's steel products is highly competitive, particularly with respect to price, quality and service. In both global and regional markets, Ternium competes against other global and local producers of steel products, which in some cases have greater financial and operating resources, or direct and indirect governmental support. Competition from such steel producers could result in declining margins and reductions in sales volumes and revenues. Ternium's competitors could use their resources in a variety of ways that may affect Ternium negatively, including by making additional acquisitions, implementing modernization programs, expanding their production capacity, investing more aggressively in product development, and displacing demand for Ternium's products in certain markets. To the extent that these producers become more efficient, Ternium could confront stronger competition and could fail to preserve its current share of the relevant geographic or product markets. In addition, there has been a trend in the past toward steel industry consolidation among Ternium's competitors, and current smaller competitors in the steel market could become larger competitors in the future. For further information on our competitors and their investments, see Item 4. "Information on the Company—B. Business Overview—Competition."

Moreover, Ternium and other steel makers compete against suppliers of alternative materials, including aluminum, wood, concrete, plastic and ceramics. In particular, certain customers are increasing their consumption of lighter-weight materials, such as aluminum, composites and carbon fiber, sometimes as a result of regulatory requirements. Competition from these alternative materials could adversely affect the demand for, and consequently the market prices of, certain steel products and, accordingly, could affect Ternium's sales volumes and revenues.

Price fluctuations or shortages in the supply of raw materials, energy and other inputs could adversely affect Ternium's profitability.

Like other manufacturers of steel-related products, Ternium's operations require substantial amounts of raw materials, energy and other inputs from domestic and foreign suppliers. In particular, the Ternium companies consume large quantities of iron ore, metallurgical coal, scrap, ferroalloys, natural gas, electricity, oxygen and other gases in operating their blast and electric arc furnaces. The prices of these raw materials, energy and other inputs can be volatile. Also, the availability and price of a significant portion of such raw materials, energy and other inputs used in Ternium's operations are subject to market conditions, government regulations or other events affecting supply and demand. For example, the collapse of a tailings dam at a mine operated by Vale S.A., or Vale, in Brumadinho, Brazil, followed by Vale's decommissioning of all upstream tailing dams and the shut down of operations at its Feijão and Vargem Grande mines, and the governments cancellation of Vale's licenses for eight tailings dams contributed to an increase in iron ore prices in the international markets as well as significant logistic burdens. In Argentina, shortages of natural gas resulted in the past in supply restrictions that, if repeated in the future, could lead to higher costs of production and eventually to production cutbacks at Ternium's facilities in Argentina. In Mexico, constraints in natural gas transportation capacity have led to increased imports of liquefied natural gas, which, from April 1, 2013, resulted in increased natural gas costs and, thus, higher steel production costs. In the past, Ternium has usually been able to procure sufficient supplies of raw materials, energy and other inputs to meet its production needs; however, it could be unable to procure adequate supplies in the future. Any protracted interruption, discontinuation or other disruption of the supply of principal inputs to the Ternium companies (including as a result of strikes, lockouts, trade restrictions, accidents or natural disasters, worldwide price fluctuations, the availability and cost of transportation or other problems) would result in lost sales and would have a material adverse effect on Ternium's business and results of operations. For further information related to raw materials, energy and other inputs requirements see Item 4. "Information on the Company—B. Business Overview—Raw Materials, Slabs, Energy and Other Inputs."

Ternium's companies depend on a limited number of key suppliers.

Ternium's companies depend on certain key suppliers for their requirements of some of their principal inputs, including Vale for iron ore, BHP Billiton and Warrior for metallurgical coal and Carbo One for pulverized coal injection coal. In general, there is a trend in the industry towards consolidation among suppliers of iron ore and other raw materials. Ternium's companies have entered into long-term contracts for the supply of some (but not all) of their principal inputs and it is expected that they will maintain and, depending on the circumstances, renew these contracts. However, if any of the key suppliers fails to deliver or there is a failure to renew these contracts, the Ternium companies could face limited access to some raw materials, energy or other inputs, or higher costs and delays resulting from the need to obtain their input requirements from other suppliers.

Risks Relating To Our Business

If Ternium does not successfully implement its business strategy, its opportunities for growth and its competitive position could be adversely affected.

Ternium plans to continue implementing its business strategy of enhancing its position as a competitive steel producer, focusing on higher margin value-added products, pursuing strategic growth opportunities, implementing Ternium's best practices in acquired and new businesses, providing services to a wider range of customers in the local and export markets, improving utilization levels of our plants, increasing efficiency and further reducing production costs. For example, on September 28, 2017, following the acquisition of a steel slab production plant in Rio de Janeiro, Brazil, Ternium announced the construction of a hot-rolling mill in its facility in Pesquería, Mexico, a logical next step to integrate the Rio de Janeiro unit to our industrial system. For further information on our 2017 acquisition of Ternium Brasil see note 3 to our consolidated financial statements included elsewhere in this annual report. Any of these components or Ternium's business strategy could be delayed or abandoned or could cost more than anticipated, any of which could impact its competitive position and reduce its revenue and profitability. For example, Ternium could fail to develop its projects and/or to make acquisitions and/or integrate newly acquired businesses to increase its steel production capacity, or may lose market share in its regional markets. Even if Ternium successfully implements its business strategy, such strategy may not yield the desired goals.

Future acquisitions or other significant investments could have an adverse impact on Ternium's operations or profits, and Ternium may not realize the benefits it expects from these business decisions.

A key element of Ternium's business strategy is to identify and pursue growth-enhancing opportunities. As part of that strategy, we regularly consider acquisitions, greenfield and brownfield projects and other significant investments. However, any growth project will depend upon market and financing conditions. We must necessarily base any assessment of potential acquisitions or other investments on assumptions with respect to operations, profitability and other matters that may subsequently prove to be incorrect. Furthermore, we may fail to find suitable acquisition targets or fail to consummate our acquisitions under favorable conditions. In the past, Ternium acquired interests in various companies, including Hylsamex S.A. de C.V., or Hylsamex, one of the main steel producers in Mexico, and Grupo Industrias Monterrey, or Grupo Imsa, a leading Mexican steel processor (both currently Ternium Mexico); Ferrasa (currently, Ternium Colombia), a Colombian steel producer and processor; and more recently CSA (currently, Ternium Brasil), a Brazilian steel slab producer. Ternium has also announced plans to build new facilities in Mexico and Colombia. Ternium also formed, together with Nippon Steel & Sumitomo Metal Corporation, or NSSMC, Tenigal, a company that manufactures and sells hot-dip galvanized and galvannealed steel sheets for the Mexican automotive market. In 2012, Ternium acquired a participation in the control group of Usiminas, the largest flat steel producer in Brazil, and in 2014 and 2016, Ternium significantly increased its equity investment in that company.

Our acquisitions or other investments may not perform in accordance with our expectations and could have an adverse impact on our operations and profits. Furthermore, we may be unable to successfully integrate any acquired businesses into our operations, realize expected synergies or accomplish the business objectives that were foreseen at the time of deciding any such investment. Moreover, we may also acquire, as part of future acquisitions, assets unrelated to our business, and we may not be able to integrate them or sell them under favorable terms and conditions. These risks, and the fact that integration of any acquired businesses will require a significant amount of time and resources of Ternium's management and employees, could have an adverse impact on Ternium's ongoing business and could have a material adverse effect on its business, financial condition and results of operations.

Ternium may be required to record a significant charge to earnings if it must reassess its goodwill, other amortizable intangible assets, or investments in non-consolidated companies.

In accordance with IFRS, management must test for impairment all of Ternium's assets whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Assets subject to testing include goodwill, intangible assets and investments in non-consolidated companies. In addition, management must test for impairment goodwill at least once a year whether or not there are indicators of impairment. IFRS requires us to recognize a non-cash charge in an amount equal to any impairment. We performed several impairment tests on our investment in Usiminas and, as of December 31, 2012, September 30, 2014 and December 31, 2015, wrote it down by $275.3 million, $739.8 million and $191.9 million, respectively (see Item 5. "Operating and Financial Review and

Prospects—Overview—Useful lives and impairment of property, plant and equipment and other long-lived assets”). As of December 31, 2018, goodwill in connection with our Mexican subsidiaries amounted to $662.3 million and the carrying value of our investment in non-consolidated companies, mainly related to our investment in Usiminas, amounted to $495.2 million. If Ternium’s management determines in the future that the goodwill from our acquisitions or our investments in non-consolidated companies are impaired, Ternium will be required to recognize a non-cash charge against earnings, which could materially adversely affect Ternium's results of operations and net worth.

If Usiminas is not able to successfully implement its business strategy, or if the business conditions in Brazil or in the global steel and mining industries were to be worse than we expected, the Company may be required to record a significant charge to earnings in the form of a further impairment of its investment in Usiminas, which could have a material adverse effect on Ternium's results, financial condition or net worth.

On January 16, 2012, Ternium acquired a participation in the control group of Usiminas, the largest flat steel producer in Brazil, for a total consideration of $2.2 billion. On October 30, 2014, Ternium acquired additional ordinary shares of Usiminas for a total consideration of $249.0 million. Between 2012 and September 2014, Usiminas improved its performance and results of operations as a result of the implementation of certain changes in its strategy and business practices. Beginning in the fourth quarter of 2014, Brazilian steel-intensive industrial sectors such as the capital goods, durable goods, vehicles and machinery and equipment sectors were adversely affected by low investments, weak consumption, strong imports and high inventories. These developments adversely affected demand for steel in Brazil and Usiminas' operating results and financial condition, resulting in the need for additional equity capital, among other things. In April 2016, Ternium subscribed to preferred shares of Usiminas for a total subscription price of $3.1 million, and in July 19 Ternium subscribed to ordinary shares for a total subscription value of $110.9 million. Ternium now owns 34.4% of ordinary shares and 1.6% of preferred shares representing 20.5% of Usiminas' capital, and holds 35.6% of the voting rights within the Usiminas' control group. Further changes to Usiminas' strategy and business practices will be required in the future in order to achieve sustainable profitability, and we cannot assure that such changes will take place or be successful. For further information on the Usiminas transactions, see note 14 to our consolidated financial statements included elsewhere in this annual report.

In addition, in 2014 a conflict arose within the Usiminas control group and its board with respect to the governance of Usiminas, including with respect to the rules applicable to the appointment of senior managers, the application of the shareholders' agreement in matters involving fiduciary duties, and the company's strategy. Although such conflict was resolved with an agreement between Ternium, NSSMC and Previdência Usiminas (formerly known as Caixa do Empregados do Usiminas), Usiminas' employee pension fund, on new governance rules for Usiminas, any future conflicts may make it more difficult to reach consensus within the control group; and, under the new Usiminas shareholders' agreement, no control group member can, without the consent of other shareholder group or groups, implement any change to Usiminas' business strategy, and therefore any necessary changes may not take place or fail to be implemented. For further information related to the conflict within the Usiminas control group and the agreement between Ternium, NSSMC and Previdencia Usiminas on governance rules for Usiminas, see Item 4. "Information on the Company—C. Organizational Structure—Other Investments—Usiminas.".

As indicated above, the Company reviews periodically the recoverability of its investment in Usiminas, and as of December 31, 2012, September 30, 2014, and December 31, 2015, Ternium wrote down its investment in Usiminas by $275.3 million, $739.8 million and $191.9 million, respectively. As of December 31, 2018, the carrying value of Ternium's investment in Usiminas was $480.1 million. Ternium reviews the economic policies of Brazil and market expectations relating to the BRL/$ exchange rate on an ongoing basis and will continue to evaluate their impact on the drivers used to calculate the value in use of Ternium's investment in Usiminas. These matters could lead to further changes in the carrying value of Ternium's investment in Usiminas, either through currency translation adjustments, impairment charges or recoveries of impairment charges. Any further write-downs to Ternium's investment in Usiminas could have a material adverse effect on Ternium's results of operations or net worth.

If we do not comply with laws and regulations designed to combat governmental corruption in countries in which we sell our products, we could become subject to fines, penalties or other sanctions and our sales and profitability could suffer.

We conduct business in certain countries known to experience governmental corruption. Although we are committed to conducting business in a legal and ethical manner in compliance with local and international statutory requirements and standards applicable to our business, there is a risk that our employees or representatives may take actions that violate applicable laws and regulations that generally prohibit the making of improper payments to foreign government officials for the purpose of obtaining or keeping business, including laws relating to the 1997 OECD

Convention on Combating Bribery of Foreign Public Officials in International Business Transactions such as the U.S. Foreign Corrupt Practices Act.

Labor disputes at Ternium's operating subsidiaries could result in work stoppages and disruptions to Ternium's operations.

A substantial majority of Ternium's employees at its manufacturing subsidiaries are represented by labor unions and are covered by collective bargaining or similar agreements, which are subject to periodic renegotiation. Strikes or work stoppages could occur prior to or during the negotiations leading to new collective bargaining agreements, during wage and benefits negotiations or, occasionally, during other periods for other reasons. Ternium could also suffer plant stoppages or strikes if it were to implement cost reduction plans. From time to time, Ternium takes measures in order to become more competitive; none of the measures taken in the past have resulted in significant labor unrest. However, we cannot assure that this situation will remain stable or that future measures will not result in labor actions against us. Any future stoppage, strike, disruption of operations or new collective bargaining agreements could result in lost sales and could increase Ternium's costs, thereby affecting our results of operations. For further information on the geographic distribution of our workforce, see Item 6. "Directors, Senior Management and Employees—D. Employees".

Changes in exchange rates or any limitation in the ability of the Ternium companies, including associates, to hedge against exchange rate fluctuations could adversely affect Ternium's business and results.

The operations of the Ternium companies expose them to the effects of changes in foreign currency exchange rates and changes in foreign exchange regulations. A significant portion of Ternium's sales are carried out in currencies other than the U.S. dollar. As a result of this foreign currency exposure, exchange rate fluctuations impact the Ternium companies' results and net worth as reported in their income statements, statements of comprehensive income and statements of financial position in the form of both translation risk and transaction risk. In the ordinary course of business, the Ternium companies may see fit to enter from time to time into exchange rate derivatives agreements to manage their exposure to exchange rate changes. Future regulatory or financial restrictions in the countries where Ternium operates may affect its ability to mitigate its exposure to exchange rate fluctuations, and thus could cause an adverse impact on Ternium's results of operations, financial condition or cash flows. For information concerning the effect of the changes in exchange rates on Ternium's business and results, see Item 5. "Operating and Financial Review and Prospects—Overview".

Cyberattacks could have a material adverse impact on our business and results of operation.

We rely heavily on information systems to conduct our business. Although we devote significant resources to protect our systems and data, from time to time we experience varying degrees of cyber incidents in the normal conduct of our business, which may occasionally include sophisticated cybersecurity threats such as unauthorized access to data and systems, loss or destruction of data, computer viruses or other malicious code, phishing and/or cyberattacks. These threats often arise from numerous sources, not all of which are within our control, such as fraud or malice from third parties, failures of computer servers or other accidental technological failure, electrical or telecommunication outages or other damage to our property or assets. Given the rapidly evolving nature of cyber threats, there can be no assurance that the systems we have designed to prevent or limit the effects of cyber incidents or attacks will be sufficient to prevent or detect such incidents or attacks, or to avoid a material adverse impact on our systems when such incidents or attacks do occur. While we attempt to mitigate these risks, we remain vulnerable to additional known or unknown threats, including theft, misplacement or loss of data, programming errors, employee errors and/or dishonest behavior that could potentially lead to the compromising of sensitive information, improper use of our systems or networks, as well as unauthorized access, use, disclosure, modification or destruction of such information, systems and/or networks.

If our systems for protecting against cybersecurity risks are circumvented or breached, this could also result in disruptions to our business operations (including but not limited to, defective products or production downtimes), access to our financial reporting systems, the loss of access to critical data or systems, misuse or corruption of critical data and proprietary information (including our intellectual property and customer data), as well as damage to our reputation with our customers and the market, failure to meet customer requirements, customer dissatisfaction and/or other financial costs and losses. In addition, given that cybersecurity threats continue to evolve, we may be required to devote additional resources in the future to enhance our protective measures or to investigate and/or remediate any cybersecurity vulnerabilities. Moreover, any investigation of a cyber-attack would take time before completion, during which we would not necessarily know the extent of the actual or potential harm or how best to remediate it, and certain errors or actions could be repeated or compounded before duly discovered and remediated (all or any of which could further increase the costs and consequences arising out of such cyberattack). Ternium does not maintain any specific insurance coverage to protect against cybersecurity risks. Even if we contracted such coverage in the future, we cannot ensure that it will be sufficient to cover any particular losses resulting from a cyberattack.

Risks Relating To Our Mining Activities

Mining is one of Ternium's two reporting segments, and iron ore is one of the principal raw materials used by Ternium's operating subsidiaries in its steelmaking segment. Ternium has equity interests in two iron ore mining companies in Mexico: a 100% interest in Las Encinas and a 50% interest in Consorcio Peña Colorada. In addition, although Ternium is currently seeking to secure a stable supply of iron ore for its own internal consumption, in the future it could seek to expand its supplies of iron ore depending upon, among other factors, market conditions and strategic needs. Our present and future mining activities are or would be subject to particular risks, as follows:

Unexpected natural and operational catastrophes may impact the environment or cause exposure to hazardous substances, adversely impact our operations and profitability, and result in material liabilities to us.

We operate extractive, processing and logistical operations, including tailings dams, in many geographic locations. Liabilities associated with our mining activities include those resulting from tailings and sludge disposal, effluent management, and rehabilitation of land disturbed during mining processes. Our operations involve the use, handling, storage, discharge and disposal into the environment of hazardous substances and the use of natural resources. The iron ore mining industry is generally subject to significant risks and hazards, including environmental pollution, such as spilling or emissions of polluting substances or other hazardous materials; operational incidents, such as open-cut pit wall failures, rock falls or tailings dam breaches; transportation incidents, involving mobile equipment or machinery, slurry pipes and cable transportation; and may also be subject to unexpected natural catastrophes. This could result in environmental damage, damage to or destruction of properties and facilities, personal injury or death, and delays in production. For example, in January 2019, a tailings dam at Vale's Córrego do Feijão mine in Brumadinho, Brazil, collapsed, releasing a mudflow that resulted in hundreds of people dead or missing. This incident follows on from a previous incident in November 2015 when the collapse of the Samarco dam, operated by Vale and BHP, resulted in the death of 19 people. Ternium operates mines with tailings dams in Mexico and could become subject to liabilities arising from similar incidents in the future. While Ternium regularly carries out stability assessments of its tailings dams, it cannot guarantee that failures or breaches will not occur in the future.

We may also be subject to claims under federal and local laws and regulations for toxic torts, natural resource damages and other damages, as well as for the investigation and clean-up of soil, surface water, sediments, groundwater and other natural resources. Such claims for damages and reclamation may arise out of current or former conditions at sites that we own, lease or operate currently or inactive sites that we currently own, leased land sites and third-party waste disposal sites. We may be named as a responsible party at other sites in the future. We also could be subject to litigation for alleged bodily injuries arising from claimed exposure to hazardous substances allegedly used, released, or disposed of by us. Environmental impacts as a result of our operations could result in costs and liabilities that could materially and adversely affect our margins, cash flow and profitability. Third-party claims arising from these events may exceed the limit of liability of the insurance policies we could have in place.

Required governmental concessions could be subject to changes or termination, permits and rights of use and occupancy could be difficult to obtain or maintain and taxes or royalties applicable to the mining industry could change, all of which could adversely affect our mining activities and operating costs.

Our mining activities are subject to specific regulations and depend on concessions and authorizations granted by governmental authorities. Amendments to applicable laws and regulations in Mexico may change the terms pursuant to which we are required to pursue our exploration, mining and ore processing activities. For example, on January 1, 2014, a comprehensive tax reform became effective in Mexico, including the enactment of new taxes and royalties over mining activities, which in the case of Ternium's iron ore mining subsidiaries resulted in a 7.5% royalty on mining profits, calculated on a special tax basis. Additional changes to Mexican laws and regulations may result in new taxes or royalties or require modifications to the processes and technologies used in our mining activities, leading to unexpected capital expenditures and higher costs.

If the relevant government authority determines that we are not in compliance with our obligations as concessionaires, it may terminate our concession. Furthermore, in order to explore or exploit mines, it is necessary to obtain the right of use and occupancy of the land where the mines are situated. Even though government regulations frequently establish provisions intended to facilitate the establishment of such rights, in some cases it may be difficult to reach and maintain agreements with the landowners or such agreements may be excessively onerous. If we are unable to establish use and occupancy rights on acceptable terms, our mining activities may be compromised. In addition, Ternium's iron ore mining subsidiaries need to obtain, in the normal course of business, permits for the preparation of new iron ore bodies at the mines and for the expansion of tailings deposit capacity. If we are unable to obtain such permits on a timely basis, we may need to alter our mining and/or production plans, which could lead to unexpected capital expenditures and higher costs.

Our reserve estimates may differ materially from mineral quantities that we may be able to actually recover, or our estimates of mine life may prove inaccurate; and market price fluctuations and changes in operating and capital costs may render certain ore reserves uneconomical to mine in the future or cause us to revise our reserve estimates.

Ternium's reserves are estimated quantities of ore that it has determined can be economically mined and processed under present and anticipated conditions to extract their mineral content. There are numerous uncertainties inherent in estimating quantities of reserves and in projecting potential future rates of mineral production, including factors beyond our control. Reserve calculations involve estimating deposits of minerals that cannot be measured in an exact manner, and the accuracy of any reserve estimate is a function of the quality of available data and engineering and geological interpretation and judgment. Reserve estimates also depend on assumptions relating to the economic viability of extraction, which are established through the application of a life of mine plan for each operation or project providing a positive net present value on a forward-looking basis, using forecasts of operating and capital costs based on historical performance, with forward adjustments based on planned process improvements, changes in production volumes and in fixed and variable proportions of costs, and forecasted fluctuations in costs of raw material, supplies, energy and wages. These forecasts and projections involve assumptions and estimations that, although we believe are reasonable at the time of estimating our reserves, may change in the future and may fail to anticipate geological, environmental or other factors or events that could make it difficult or unprofitable to mine certain ore deposits.

In addition, our reserve estimates are of in-place material after adjustments for mining depletion and mining losses and recoveries, with no adjustments made for metal losses due to processing. As a result, no assurance can be given that the indicated amount of ore will be recovered from our reserves, or that it will be recovered at the anticipated rates, or that extracted ore will be converted into saleable production over the mine life at levels consistent with our reserve estimates. Reserve estimates may vary from those included in this annual report, and results of mining and production subsequent to the date of an estimate may lead to future revisions of estimates. Estimates of mine life may require revisions based on actual production figures, changes in reserve estimates and other factors. For example, fluctuations in the market prices of minerals, reduced recovery rates or increased operating and capital costs due to inflation, exchange rates, mining duties or other factors could affect our mine life projections. To the extent that market price fluctuations or changes in our operating and capital costs increase our costs to explore, locate, extract and process iron ore, we may be required to lower our reserve estimates if certain ore reserves become uneconomical to mine in the future.

Our exploration activities are subject to uncertainties as to the results of such exploration; even if the exploration activities lead to the discovery of ore deposits, the effective exploitation of such deposits remains subject to several risks.

Exploration activities are highly speculative, involve substantial risks and may be unproductive. We may incur substantial costs for exploration which do not yield the expected results. The failure to find sufficient and adequate reserves could adversely affect our business. In addition, even if ore deposits are discovered, our ability to pursue exploitation activities may be delayed for a long time during which market conditions may vary. Significant resources and time need to be invested in order to establish ore resources through exploration, define the appropriate processes that shall be undertaken, obtain environmental licenses, concessions and permits (including water usage permits), acquire land, build the necessary facilities and infrastructure for greenfield projects and obtain the ore or extract the metals from the ore. If a project does not turn out to be economically feasible by the time we are able to exploit it, we may incur substantial write-offs.

Our expected costs and capital expenditure requirements for exploration or exploitation activities may vary significantly and affect our financial condition and expected results of operations.

We may be subject to increased costs or delays relating to the acquisition of adequate equipment for the exploration and exploitation of ore deposits. Moreover, we may face increasing costs or capital expenditure requirements related to several factors, including diminished iron ore reserve grades, deeper pits and operational sections of our mines, iron ore deposits within the pit area that are more difficult to locate or extract and increased energy supply requirements that may be difficult to obtain. Adverse mining conditions and other situations related to the operation of the mine, whether permanent or temporary, may lead to a significant increase in our planned capital expenditures and our costs, as well as affect our ability to produce the expected quantities of mineral. If this occurs, our financial condition and expected results of operations may also be negatively affected.

Difficulties in relationships with local communities may adversely affect our mining activities and results of operations.

Communities living or owning land near areas where we operate may take actions to oppose and interfere with our mining activities. Although we make significant efforts to maintain good relationships with such communities, actions taken by them (or by interest groups within those communities) may hamper our ability to conduct our mining activities as planned, request the government to revoke or cancel our concessions or environmental or other permits, prevent us from fulfilling agreements reached with the government in connection with our mining activities, or significantly increase the cost of exploring and/or exploiting the mines, thereby adversely affecting our business and results of operations.

For example, in Aquila, Mexico, in 2011, 2012 and 2013, members of certain native communities blocked roads demanding higher compensation for the use of land for mining activities (and these actions prevented Ternium from transporting iron ore from the mines to the pelletizing facilities for periods of time that on some occasions ultimately resulted in a technical stoppage of the mining activities in Aquila). In July 2015, a group of people demanding additional benefits for the native community entered and occupied certain Consorcio Peña Colorada's facilities located in Colima and Jalisco, Mexico, blocked the principal accesses and impeded the entrance and exit of the employees for more than eight hours. In 2013, local communities initiated legal actions aimed at the cancellation of certain permits granted to Las Encinas and to Consorcio Peña Colorada. Although those legal actions did not succeed, Mexican legislation affords judges the power to preemptively suspend environmental or other permits or concessions, or to take certain other measures, in order to protect the ejidos (land jointly owned by native communities) until a legal action is resolved. An adverse legal decision suspending or cancelling our permits, or the illegal occupation of our facilities, could adversely impact our mining activities and results of operations.

Risks Relating To The Structure Of The Company

As a holding company, the Company's ability to pay cash dividends depends on the results of operations and financial condition of its subsidiaries and could be restricted by legal, contractual or other limitations.

The Company conducts all its operations through subsidiaries. Dividends or other intercompany transfers of funds from those subsidiaries are the Company's primary source of funds to pay its expenses, debt service and dividends and to repurchase shares or ADSs. The Company does not and will not conduct operations at the holding company level. The ability of the Company's subsidiaries to pay dividends and make other payments to the Company will depend on their results of operations and financial condition and could be restricted by, among other things, applicable corporate and other laws and regulations, including those imposing foreign exchange controls or restrictions on the repatriation of capital or the making of dividend payments, and agreements and commitments of such subsidiaries. If earnings and cash flows of the Company's operating subsidiaries are substantially reduced, the Company may not be in a position to meet its operational needs or to pay dividends. In addition, the Company's ability to pay dividends is subject to legal and other requirements and restrictions in effect at the holding company level. For example, the Company may only pay dividends out of net profits, retained earnings and distributable reserves and premiums, each as defined and calculated in accordance with Luxembourg laws and regulations.

The Company's controlling shareholder may be able to take actions that do not reflect the will or best interests of other shareholders.

As of the date of this annual report, San Faustin beneficially owned 62.02% of our outstanding voting shares and Tenaris, which is also controlled by San Faustin, held 11.46% of our outstanding voting shares. Rocca & Partners Stichting Administratiekantoor Aandelen San Faustin, or RP STAK, holds voting shares in San Faustin sufficient in number to control San Faustin. As a result, RP STAK is indirectly able to elect a substantial majority of the members of the Company's board of directors and has the power to determine the outcome of most actions requiring shareholder approval, including, subject to the requirements of Luxembourg law, the payment of dividends. The decisions of the controlling shareholder may not reflect the will of other shareholders. In addition, our controlling shareholder may cause a general meeting of shareholders to be held, propose the agenda for such meeting, and vote at such meeting in favor of an issuance of shares for consideration without pre-emptive rights of existing shareholders, thereby diluting the minority interest in the Company. For further information, see Item 7. "Major Shareholders and Related Party Transactions—A. Major Shareholders".

Non-controlling interests in our subsidiaries could delay or impede our ability to complete our strategy.

We do not own one hundred percent of the interests in certain of our subsidiaries. As of February 28, 2019, 26.03% of Ternium Argentina was held by Administración Nacional de la Seguridad Social, or ANSeS, Argentina's governmental social security agency, and 13.03% was publicly held. ANSeS became a significant shareholder of Ternium Argentina in the last quarter of 2008 as a result of the nationalization of Argentina's private pension system, which caused assets under administration of Argentina's private pension funds-including significant interests in publicly traded companies, such as Ternium Argentina, held by such funds-to be transferred to ANSeS. Ternium holds a 51% ownership interest in Tenigal, and NSSMC holds the remaining 49%. We also have a participation in the control group of Usiminas. For further information on the Usiminas investment, see Item 4. "Information on the Company—C. Organizational Structure—Other Investments—Usiminas". The existence of non-controlling interests in these companies could prevent Ternium from taking actions that, while beneficial to Ternium, might not be beneficial to each relevant subsidiary, considered separately. As a result, we could be delayed or impeded in the full implementation of our strategy or the maximization of Ternium's competitive strengths.

Risks Relating To The Countries In Which We Operate

Negative economic, political and regulatory developments in certain markets where Ternium has a significant portion of its operations and assets could hurt Ternium's shipment volumes or prices, increase its costs or disrupt its manufacturing operations, thereby adversely affecting its results of operations and financial condition.

The results of Ternium's operations are subject to the risks of doing business in emerging markets, principally in Mexico, Brazil and Argentina and to a lesser extent in Colombia, and have been, and could in the future be, affected from time to time to varying degrees by economic, political, social and regulatory developments, such as nationalization, expropriation or forced divestiture of assets; restrictions on production, domestic sales, imports and exports; interruptions to essential energy inputs; restrictions on the exchange or transfer of currency, repatriation of capital, or payment of dividends, debt principal or interest, or other contractual obligations; inflation; devaluation; war or other international conflicts; civil unrest and local security concerns that threaten the safe operation of our facilities; direct and indirect price controls; tax increases, changes (including retroactive) in the enforcement or interpretation of tax laws and other retroactive tax claims or challenges; changes in laws or regulations; cancellation of contract rights; and delays or denial of governmental approvals. Both the likelihood of such occurrences and their overall effect upon Ternium vary greatly from country to country and are not predictable. Realization of these risks could have an adverse impact on the results of operations and financial condition of Ternium's subsidiaries located in the affected country and, depending on their materiality, on the results of operations and financial condition of Ternium as a whole.

Mexico

Ternium has significant manufacturing operations and assets located in Mexico and a majority of its sales are made to customers in this country. The majority of Ternium's revenues from its Mexican operations, therefore, are related to market conditions in Mexico and to changes in its economic activity. Ternium's business could be materially and adversely affected by economic, political and regulatory developments in Mexico.

Economic and social conditions and government policies in Mexico could negatively impact Ternium's business and results of operations.

In the past, Mexico has experienced several periods of slow or negative economic growth, high inflation, high interest rates, currency devaluation and other economic problems. Furthermore, the Mexican national economy tends to reflect changes in the economic environment in the United States and could be affected by changes in the terms of trade. If problems such as deterioration in Mexico's economic conditions reemerge (for example, as a result of lower revenues due to oil price decline) or there is a future re-emergence of social instability, political unrest, reduction in government spending or other adverse social developments, foreign exchange and financial markets may exhibit continued volatility, which, depending on its severity and duration, could adversely affect the business, results of operations, financial condition or liquidity of Ternium. Moreover, adverse economic conditions in Mexico could result in, among other things, higher interest rates accompanied by reduced opportunities for refunding or refinancing, reduced domestic consumption of Ternium's products, decreased operating results and delays in the completion of ongoing and future capital expenditures.

Regulatory changes in Mexico could adversely impact our results of operations and net results.

In the past, Mexico went through various economic reforms. In December 2012, new labor regulations became effective. The most relevant aspects of those regulations were a reassessment of the status of third-party workers, changes in rest periods, and an increase in the amounts of fines and penalties applicable for violations of the regulations. In addition, in 2014 a comprehensive tax reform became effective in Mexico. Among other things, the reform maintained the corporate income tax at 30% (eliminating a scheduled reduction to 28%); repealed the tax consolidation regime, limiting Ternium's ability to perform fiscal consolidation among its Mexican subsidiaries beginning as of January 1, 2014; introduced a 10% withholding tax on dividend distributions; and created a new royalty over mining activities, which in the case of Ternium's iron ore mining subsidiaries resulted in a 7.5% royalty on mining profits calculated on a special tax basis. These measures resulted in a deferred tax loss of $22.3 million in Ternium's 2013 results. Any additional new changes to Mexican regulations could adversely impact our results of operations and net results.

Violence and crime in Mexico could negatively impact Ternium's business and operations.

In recent years, there have been high incidences of violence and crime related to drug trafficking in Mexico, including the Monterrey area in Nuevo León, where our main facilities are located, and Michoacán, where some of our mining facilities are located. Security issues could affect our day-to-day operations and could also result in an economic slowdown, reducing domestic demand for our products and thereby having an adverse effect on our business. A deterioration of the security situation could result in significant obstacles or additional costs to the implementation of our growth plans in Mexico, including delays in the completion of capital expenditures.

Unexpected changes in trade rules with United States could adversely impact our results of operations and net results.

Mexico, United States and Canada are in the process of ratifying the United States-Mexico-Canada Agreement, or USMCA, a new trade agreement that when ratified is expected to replace the current NAFTA. In addition, Mexico and Unites States have been negotiating changes to the imposition of a 25% tariff on steel products exported to Unites States, under Section 232 of the Trade Expansion Act of 1962. Uncertainties about the possible outcome of current negotiations or the possibility of new trade conflicts in the future could adversely affect the investment climate and economic activity in Mexico, even though a significant period may elapse until any potential changes become effective. Moreover, amendments to, or the termination of current terms of trade could adversely and materially affect Ternium's shipments, results of operations and net worth.

Brazil

Ternium has significant manufacturing operations and assets located in Rio de Janeiro, Brazil, and some of its sales are made in Brazil. Ternium Brasil's profitability could be materially and adversely affected by economic, political, social, fiscal and regulatory developments in Brazil.

Changing economic and political conditions in Brazil, which on several occasions in the past resulted in economic uncertainties and recession, may occur in the future, thereby adversely affecting our business, financial condition and results.

The Brazilian economy has been characterized by frequent and occasionally extensive intervention by the Brazilian government. The Brazilian government has often changed monetary, taxation, credit, tariff and other policies to influence the course of the country's economy. The Brazilian government's actions to control inflation and implement other policies have involved hikes in interest rates, wage and price controls, foreign exchange controls and devaluation, freezing of bank accounts, capital controls and restrictions on imports. If repeated in the future, such governmental policies may adversely affect our results of operations. The Brazilian government's policies may also result in increases in our tax payments or tariffs, which could adversely affect industry profitability. We may be unable to maintain our projected cash flow and profitability following any increases in Brazilian taxes or tariffs applicable to us and our operations. The Brazilian economy has been affected by inflation, energy shortages, illiquid lending markets and other political, diplomatic, social and economic developments. Uncertainty over whether the Brazilian government will change policies or regulations affecting these or other factors may contribute to economic instability in Brazil. Our business and results of operations in Brazil could be adversely affected by rapidly changing economic conditions in Brazil or by the Brazilian government's policy response to such conditions.

Political instability could adversely affect our business, financial condition and results.

Brazil's political environment has historically influenced, and continues to influence, the performance of the country's economy. Political crises have affected and continue to affect public and investor confidence, which resulted in economic deceleration. Brazil has experienced heightened economic and political instability derived from various ongoing investigations into allegations of money laundering and corruption being conducted by the Office of the Brazilian Federal Prosecutor, including the ongoing Lava Jato investigation, which has had a negative impact on the Brazilian economy and political environment and contributed to a decline in market confidence in Brazil. The potential outcome of these investigations is uncertain, but they have already had an adverse impact on the image and reputation of the implicated companies, and on the general market perception of the Brazilian economy, which experienced negative gross domestic product, or GDP, growth rates of 3.8% in 2015 and 3.6% in 2016 and a public debt rating downgrade by Moody's, Standard & Poor's and Fitch Ratings to below investment grade in 2015. We cannot predict whether the Lava Jato investigation will lead to further political and economic instability or whether new allegations against government officials will arise in the future. In addition, we cannot predict the outcome of such investigation nor its effect on the Brazilian economy and, consequently, on the results of operations and financial conditions of Ternium's businesses in Brazil.

Inflation may undermine economic growth in Brazil and impact our costs, thereby adversely affecting our results of operations and financial position.

High levels of inflation have in the past undermined the Brazilian economy and the government's ability to stimulate economic growth. Consumer price inflation in Brazil, as reported by IBGE, the Brazilian geography and statistics bureau, amounted to 3.4% in 2018, 2.1% in 2017 and 6.6% in 2016. If inflation were to increase again in the future, our results of operations and financial position could be negatively impacted, as BRL-denominated costs (mainly labor-related costs) at Ternium Brasil increase, thereby affecting our cost-competitiveness. Inflationary pressures may also lead to the imposition of additional government policies to combat inflation and hinder our access to Brazilian capital markets, which could adversely affect our business and our ability to finance our operations and capital expenditures, making it impossible to estimate with reasonable certainty future results of operations of Ternium Brasil.

Argentina

Most of Ternium Argentina's sales revenue is affected by market conditions in Argentina and changes in Argentina's GDP, and per capita disposable income. Accordingly, Ternium Argentina's business could be materially and adversely affected by economic, political, social, fiscal and regulatory developments in Argentina. For further information on Ternium's sales in Argentina, see Item 4. "Information on the Company—B. Business Overview—Sales—Southern Region".

Economic and political instability in Argentina, which on several occasions resulted in economic uncertainties and recession, may occur in the future, thereby adversely affecting our business, financial condition and results.

Our business and results of operations in Argentina depend on macroeconomic conditions, among other factors. Steel shipments to the Argentine domestic market were affected as a result of the 2008-2009 downturn in the global economy. Steel shipments to the Argentine domestic market also decreased in 2016, as the country faced a significant rebalancing of the economy's relative prices in a year of macroeconomic policy changes, and in 2018, as the economy was affected by a severe downturn as a result of multiple factors, including a steep decline in grain production due to adverse weather conditions, financial market volatility and high interest rates. The Argentine economy is currently facing significant challenges. High and unpredictable inflation makes renegotiation of collective bargaining agreements difficult. In addition, in the last decade, the Argentine economy was affected by supply constraints and capital investment declined significantly due to, among other factors, political, economic and financial uncertainties and government actions, which included price and foreign exchange controls, import restrictions, export taxes, an increased level of government intervention in, or limitations to, the conduct of business in the private sector and other measures affecting investor confidence. Although some of these restrictions have been lifted, there can be no assurance that they will not be reestablished in the future or that the Argentine government will not take additional similar measures in the future. Economic conditions in Argentina have deteriorated rapidly in the past and may deteriorate rapidly in the future. The Argentine economy may not grow and economic instability may increase. Our business and results of operations in Argentina could be adversely affected by rapidly changing economic conditions in Argentina or by the Argentine government's policy response to such conditions.

Inflation may undermine economic growth in Argentina and impact our costs, thereby adversely affecting our results of operations and financial position.

In the past, inflation has undermined the Argentine economy and the government's ability to stimulate economic growth. Consumer price inflation in Argentina, as reported by INDEC, the Argentine statistics and census bureau, amounted to 47.6% in 2018 and 24.8% in 2017. Sustained high inflation in Argentina negatively impact our results of operations and financial position, as ARS-denominated costs (mainly labor-related costs) at Ternium Argentina increase, thereby affecting its cost-competitiveness and adversely affecting its margins. In addition, a high inflation economy could undermine Argentina's foreign competitiveness in international markets and negatively affect the economy's activity and employment levels. Argentine inflation rate volatility makes it impossible to estimate with reasonable certainty the extent to which activity levels and results of operations of Ternium Argentina could be affected by inflation in the future.

The Argentine government has increased taxes on Argentine companies and could further increase the fiscal burden in the future, which could adversely affect our results of operations, net results and financial condition.

Between 1992 and 2017, the Argentine government did not permit the application of an inflation adjustment on the value of fixed assets for tax purposes. As a result of the substantial devaluation of the Argentine peso against the U.S. dollar and significant inflation over the last decade, the amounts that the Argentine tax authorities permitted Ternium Argentina to deduct as depreciation for its past investments in plant, property and equipment have been substantially reduced in real terms, thus creating artificial gains for tax purposes which resulted in effective tax rates that are higher than statutory tax rates. In addition, provincial taxes on Ternium Argentina's sales have increased over the last few years. In September 2013, Argentine Congress approved a new 10% withholding tax on dividend distributions in Argentina. This measure resulted in a deferred tax loss of $24.0 million in Ternium's 2013 results, which was recovered after the elimination of such tax in July 2016. By year-end 2017, Congress passed a new tax law which seeks to gradually decrease the tax burden on Argentine corporations over a five-year period. During September 2018, the Argentine government suspended tax rebates and imposed a new general tax on exports of goods. Although the applicable rate is 12%, the relevant export tax may not exceed, in case of Ternium Argentina, ARS3 (approximately $0.07) per each U.S. dollar worth of exports. If the tax burden on Ternium Argentina's operations or its shareholders were increased in the future, Ternium's results of operations, net results and financial condition could be adversely affected.

Argentine exchange controls could prevent Ternium from paying dividends or other amounts from cash generated by Ternium Argentina's operations.

In the past, the Argentine government and the Argentine central bank introduced several rules and regulations to reduce volatility in the ARS/$ exchange rate, and implemented formal and informal restrictions on capital inflows into Argentina and capital outflows from Argentina. Although such restrictions were lifted by the current administration, such controls may be reestablished, or additional restrictions of that kind may be imposed in the future, and could expose Ternium to the risk of losses arising from fluctuations in the exchange rate or affect Ternium's ability to finance its investments and operations in Argentina or impair Ternium's ability to convert and transfer outside Argentina funds generated by Ternium Argentina. For further information on Argentina's current exchange controls and restrictions, see Item 10. "Additional Information—D. Exchange Controls".

Restrictions on the imports of key steelmaking inputs for Ternium Argentina's operations could adversely affect Ternium Argentina's production and revenues and negatively impact Ternium's results of operations.

Some of Ternium Argentina's key steelmaking inputs, including iron ore and metallurgical coal, are imported into Argentina. In the past, different government administrations implemented significant import restrictions; for instance, all payments on imports of goods and services were required to be approved by the Argentine federal tax authority and other authorities, such as the Secretary of Commerce. Although most restrictions were lifted by the current administration, such import restrictions, if reinstated, could delay imports and adversely affect our business, operations and growth projects in Argentina. In addition, they could affect Ternium Argentina's exports from Argentina, considering that foreign countries could adopt and implement counter-trade measures.

Restrictions on supply or an increase in the cost of energy to Ternium Argentina's operations in Argentina could curtail Ternium Argentina's production and negatively impact Ternium's results of operations.

For over a decade, Argentina has suffered from an insufficient level of investment in natural gas and electricity supply and transport capacity, coupled with a substantial increase in demand for natural gas and electricity. This, in turn, resulted in shortages of natural gas and electricity to residential users and, in particular, to industrial users, including Ternium Argentina, during periods of high demand. Ternium Argentina's operations experienced constraints in their natural gas supply requirements and interruptions in their electricity supply at peak hours on many occasions. Although the Argentine government is making efforts to increase availability of energy supply in the country, if demand for natural gas and electricity increases and a matching increase in natural gas and electricity supply and transport capacity fails to materialize on a timely basis, Ternium Argentina's local production (or that of its main customers and suppliers) could be curtailed, and Ternium Argentina's sales and revenues could decline. In addition, since 2016 the current administration has been gradually reducing the government's subsidies for natural gas and electricity. This could result in an increase in Ternium Argentina's energy costs, which may adversely affect Ternium

Argentina's results of operations. For further information, see "—Risks Relating to the Steel Industry—Price fluctuations or shortages in the supply of raw materials, energy and other inputs could adversely affect Ternium's profitability" above.

Certain Regulatory Risks And Litigation Risks

International trade actions or regulations and trade-related legal proceedings could adversely affect Ternium's sales, revenues and overall business.

International trade-related legal actions and restrictions pose a constant risk for Ternium's international operations and sales throughout the world. We purchase steel products, including significant quantities of steel slabs, for our operations in Mexico (which we obtain from various suppliers in Mexico and overseas), and we also purchase steel products for our operations in Colombia (which we obtain from our subsidiaries overseas and from various suppliers in Colombia and overseas) and for our operations in Argentina (which we obtain from various suppliers mainly in Brazil). Subject to certain conditions, steel products are imported into Mexico, Argentina and Colombia under zero or low import duties. In the future, the Mexican, Argentine or Colombian governments may impose new duties, increase applicable duties or impose import quotas. Increased trade liberalization has reduced certain of Ternium's imported input costs and increased Ternium's access to many foreign markets. However, greater trade liberalization in its domestic markets is increasing competition for Ternium in such markets. In recent years, as a consequence of a global downturn and an economic slowdown in China, the number of antidumping, countervailing and other actions limiting trade has increased substantially. Accordingly, producers from certain countries find themselves excluded from certain markets and in need of finding alternatives for their products. As a result, Ternium's domestic market share could be eroded in the face of foreign imports, and Ternium's increased exports to foreign markets where import barriers have been reduced may not completely offset domestic market share losses resulting from increased foreign competition.

Countries can impose restrictive import duties and other restrictions on imports under various national trade laws. The timing and nature of the imposition of trade-related restrictions potentially affecting Ternium's exports are unpredictable. Trade restrictions on Ternium's exports could adversely affect Ternium's ability to sell products abroad and, as a result, Ternium's profit margins, financial condition and overall business could suffer. One significant source of trade restrictions results from countries' imposition of so-called "antidumping" and "countervailing" duties, as well as "safeguard measures." These duties can severely limit or altogether impede an exporter's ability to export to relevant markets. In several of Ternium's export destinations, such as the United States or Europe, safeguard duties and other protective measures have been imposed against a broad array of steel imports in certain periods of excess global production capacity, as is currently the case. For example, during 2018, under Section 232 of the Trade Expansion Act of 1962, the Unites States imposed a 25% tariff on steel imports; Australia was exempted from the tariff and although Argentina, Brazil and South Korea were also exempted, they were subjected to quota system agreements covering steel imports from those countries. There is considerable uncertainty surrounding the eventual scope and impact of these measures and its corresponding exemptions. For further information, see Item 4. "Information on the Company—B. Business Overview—Regulations—Trade Regulations".

Furthermore, certain domestic producers have filed antidumping and/or countervailing duty actions against particular steel imports. Some of these actions have led to restrictions on Ternium's exports of certain types of steel products to certain steel markets. As domestic producers' filing of such actions is largely unpredictable, additional antidumping duties, countervailing duties or other such import restrictions could be imposed in the future, limiting Ternium's export sales to and potential growth in those markets.

The cost of complying with environmental regulations and potential environmental and product liabilities may increase our operating costs and negatively impact our business, financial condition, results of operations and prospects.

Our steelmaking and mining activities are subject to a wide range of local, provincial and national laws, regulations, permit requirements and decrees relating to the protection of human health and the environment, including laws and regulations relating to hazardous materials and radioactive materials and environmental protection governing air emissions, water discharges and waste management due to the risks inherent in the industries in which we operate. Laws and regulations protecting the environment have become increasingly complex and more stringent in recent years, leading to higher costs of compliance.

Currently, there are ongoing negotiations for new commitments on greenhouse gas, or GHG, emissions related to the second phase of the Kyoto protocol, which expires in 2020, and the Paris Agreement, an agreement within the United Nations Framework Convention on Climate Change dealing with GHG emissions mitigation. The Paris Agreement consists of two elements: a legally binding commitment by each participating country to set an emissions reduction target, referred to as "Nationally Determined Contributions," or "NDCs," with a review of the NDCs that could lead to updates and enhancements every five years beginning in 2023; and a transparency commitment requiring participating countries to disclose in full their progress. New environmental regulations could result from such agreements and ongoing negotiations, including a carbon pricing cap and trade systems, carbon taxes, mandated emission controls and reporting requirements.

If such new regulations are issued and become applicable to Ternium, they could have a negative effect on Ternium's business and results of operations. Furthermore, environmental laws and regulations may, in some cases, impose strict liability rendering a person liable for damages to natural resources or threats to public health and safety without regard to negligence or fault. Some environmental laws provide for joint and several strict liability for remediation of spills and releases of hazardous substances. These laws and regulations may expose us to liability for the conduct of, or conditions caused by others or for acts that were in compliance with all applicable laws at the time they were performed. Compliance with applicable requirements and the adoption of new requirements could have a material adverse effect on our consolidated statement of financial position, results of operations or cash flows. The ultimate impact of complying with environmental laws and regulations is not always clearly known or determinable since regulations under some of these laws have not yet been promulgated or are undergoing revision. The expenditures necessary to remain in compliance with these laws and regulations, including site or other remediation costs, or costs incurred from potential environmental liabilities, could have a material adverse effect on our financial condition and profitability.

While we incur and will continue to incur expenditures to comply with applicable laws and regulations, there always remains a risk that environmental incidents or accidents may occur that may negatively affect our reputation or our operations. Some of the activities for which Ternium supplies products, such as production of food cans, construction and the automotive industry, are subject to inherent risks that could result in death, personal injury, property damage or environmental pollution, and subject us to potential product liability risks that could extend to being held liable for the damages produced by such products. Furthermore, Ternium's products are also sold to, and used in, certain safety-critical appliances. Actual or claimed defects in our products may give rise to claims against us for losses suffered by our customers and expose us to claims for damages. The insurance we maintain may not be adequate or available to protect us in the event of a claim, its coverage may be limited, canceled or otherwise terminated, or the amount of our insurance may be less than the related impact on enterprise value after a loss.

Risks Relating To Our ADSs

The market price for our ADSs could be highly volatile.

Volatility in the price of our ADSs may be caused by factors within or outside of our control and may be unrelated or disproportionate to Ternium's operating results. In particular, announcements of potentially adverse developments, such as proposed regulatory changes, new government investigations or the commencement or threat of litigation against Ternium, as well as announcements of transactions, investments, or changes in strategies or business plans of Ternium or its competitors, could adversely affect the trading price of our ADSs, regardless of the likely outcome of those developments. Broad market and industry factors could adversely affect the market price of our ADSs, regardless of their actual effect in operating performance. As an example of this volatility, the price of our ADSs closed at $45.18 on June 2, 2008, and fell to a low of $4.55 on November 20, 2008. In the 2009-2010 period, the price of our ADSs recovered and reached a high closing price of $43.26 on January 5, 2011, but then fell to a low closing price of $15.54 on November 29, 2011. In the 2012-2013 period, the price of our ADSs recovered and reached a high closing price of $32.24 on January 15, 2014, but then fell to a low closing price of $10.56 on January 15, 2016. Since then, the price of our ADSs has recovered and traded in a range of $25.57 to $42.19 in the last twelve months up to February 2019. Furthermore, the trading price of our ADSs could suffer as a result of developments in emerging markets. Although the Company is organized as a Luxembourg corporation, almost all of its assets and operations are located in Latin America. Financial and securities markets for companies with a substantial portion of their assets and operations in Latin America are, to varying degrees, influenced by political, economic and market conditions in emerging market countries. Although market conditions are different in each country, investor reaction to developments in one country can have significant effects on the securities of issuers with assets or operations in other emerging markets, including Mexico, Brazil, Argentina and Colombia. See "Risks Relating to the Countries in Which We Operate."

In deciding whether to purchase, hold or sell our ADSs, you may not be able to access as much information about us as you would in the case of a U.S. company.

There may be less publicly available information about us than is regularly published by or about U.S. issuers. Also, corporate and securities regulations governing Luxembourg companies may not be as extensive as those in effect in the United States. Furthermore, IFRS, the accounting standards in accordance with which we prepare our consolidated financial statements, differ in certain material aspects from the accounting standards used in the United States.

Holders of our ADSs may not be able to exercise, or may encounter difficulties in the exercise of, certain rights afforded to shareholders.

Certain shareholders' rights under Luxembourg law, including the right to participate and vote at general meetings of shareholders, to include items on the agenda for the general meetings of shareholders, to receive dividends and distributions, to bring actions, to examine books and records and to exercise appraisal rights may not be available to holders of ADSs, or may be subject to restrictions and special procedures for their exercise, as holders of ADSs only have those rights that are expressly granted to them in the deposit agreement. The Bank of New York Mellon, or BNY Mellon, as depositary, through its custodian agent, is the registered shareholder of the deposited shares underlying the ADSs and therefore only the depositary can exercise the shareholders' rights in connection with the deposited shares. For example, if we make a distribution in the form of securities, the depositary is allowed, at its discretion, to sell that right to acquire those securities on your behalf and to instead distribute the net proceeds to you. Also, under certain circumstances, such as our failure to provide the depositary with voting materials on a timely basis, you may not be able to vote by giving instructions to the depositary. If the depositary does not receive voting instructions from the holder of ADSs or the instructions are not in proper form, then the depositary shall deem such holder of ADSs to have instructed the depositary to vote the underlying shares represented by ADSs in favour of any proposals or recommendations of the Company (including any recommendation by the Company to vote such underlying shares on any given issue in accordance with the majority shareholder vote on that issue) for which purposes the depositary shall issue a proxy to a person appointed by the Company to vote such underlying shares represented by ADSs. Under the deposit agreement, no instruction shall be deemed given and no proxy shall be given with respect to any matter as to which the Company informs the depositary that (x) it does not wish such proxy given, (y) substantial opposition exists, or (z) the matter materially and adversely affects the rights of the holders of ADSs.

Holders of our shares and ADSs in the United States may not be able to exercise preemptive rights in certain cases.

Pursuant to the Luxembourg Company Law, existing shareholders of the Company are generally entitled to preemptive subscription rights in the event of capital increases and issues of shares against cash contributions. Under the Company's articles of association, the board of directors is authorized to waive, limit or suppress such preemptive subscription rights. The validity period of such authorization will expire (unless renewed) on June 5, 2020. The Company, however, may issue shares without preemptive rights only if the newly issued shares are issued: (i) for, within, in conjunction with or related to, an initial public offering of the shares of the Company on one or more regulated markets (in one or more instances); (ii) for consideration other than cash; (iii) upon conversion of convertible bonds or other instruments convertible into shares of the Company; provided, however, that the preemptive subscription rights of the then-existing shareholders shall apply in connection with any issuance of convertible bonds or other instruments convertible into shares of the Company for cash; or (iv) subject to a certain maximum percentage, as compensation to directors, officers, agents or employees of the Company, its direct or indirect subsidiaries or its affiliates, including without limitation the direct issuance of shares or the issuance of shares upon exercise of options, rights convertible into shares or similar instruments convertible or exchangeable into shares issued or created to provide compensation or incentives to directors, officers, agents or employees of the Company, its direct or indirect subsidiaries or its affiliates. For further details, see Item 10. "Additional Information—B. Memorandum and Articles of Association".

Furthermore, holders of our shares and ADSs in the United States may, in any event, not be able to exercise any preemptive rights, if granted, for shares unless those shares are registered under the U.S. Securities Act of 1933, as amended, or the Securities Act, with respect to those rights or an exemption from registration is available. We intend to evaluate, at the time of any rights offering, the costs and potential liabilities associated with the exercise by holders of shares and ADSs of the preemptive rights for shares, and any other factors we consider appropriate at the time, and then to decide as to whether to register additional shares. We may decide not to register any additional shares, requiring a sale by the depositary of the holders' rights and a distribution of the proceeds thereof. Should the depositary not be permitted or otherwise be unable to sell preemptive rights, the rights may be allowed to lapse with no consideration to be received by the holders of the ADSs.

It may be difficult to obtain or enforce judgments against the Company in U.S. courts or courts outside of the United States.

The Company is a public limited liability company (société anonyme) organized under the laws of Luxembourg, and most of its assets are located outside of the United States. Furthermore, most of the Company's directors and officers named in this annual report reside outside the United States. As a result, investors may not be able to effect service of process within the United States upon the Company or its directors or officers or to enforce against the Company or them in U.S. courts judgments predicated upon the civil liability provisions of U.S. federal securities law. Likewise, it may be difficult for a U.S. investor to bring an original action in a Luxembourg court predicated upon the civil liability provisions of the U.S. federal securities laws against the Company, its directors or its officers. There is also uncertainty with regard to the enforceability of original actions in courts outside the United States of civil liabilities predicated upon the civil liability provisions of U.S. federal securities laws. Furthermore, the enforceability in courts outside the United States of judgments entered by U.S. courts predicated upon the civil liability provisions of U.S. federal securities law will be subject to compliance with procedural requirements under applicable local law, including the condition that the judgment does not violate the public policy of the applicable jurisdiction.

Item 4. Information on the Company

Overview

Ternium is Latin America's leading flat steel producer with an annual crude steel production capacity of 12.4 million tons. The company operates through subsidiaries in Mexico, Brazil, Argentina, Colombia, the southern United States and Central America, which own regional manufacturing facilities, service center and distribution networks. In addition, Ternium participates in the control group of Usiminas, a leading steel company in the Brazilian market. Our customers range from small businesses to large global companies in the automotive, home appliances, HVAC (heat, ventilation and air conditioning), construction, capital goods, container, food and energy industries across the Americas. Ternium supplies a broad range of high value-added steel products and has advanced customer integration systems that enable us to differentiate ourselves from our competitors through the offering of sophisticated products and services.

The company's industrial system has varied production technologies that provide a diversified cost structure, based on different types of raw material and energy sources, and a flexible production configuration. The industrial system includes proprietary iron ore mines, steelmaking facilities, finishing facilities, service centers and a broad distribution network to offer slabs, hot-rolled products, cold-rolled products, galvanized and electro-galvanized sheets, pre-painted sheets, tinplate, welded pipes, bars and wire rods as well as slit and cut-to-length products. Its innovative culture, industrial expertise and long-term view enable Ternium to continuously achieve new breakthroughs in industrial excellence, competitiveness and customer service.

We believe that Ternium is the leading supplier of flat steel products in Mexico and Argentina, has a significant position as supplier of steel products in Colombia and in various other countries in Latin America, and is a competitive player in the international steel market for steel products. Through its network of commercial offices in several countries in Latin America, the United States and Spain, Ternium maintains an international presence that allows it to reach customers outside its local markets, achieves improved effectiveness in the supply of its products and in the procurement of semi-finished steel, and maintains a fluent commercial relationship with its customers by providing continuous services and assistance.

In 2018, 55% of Ternium's net sales of steel products were made to Mexico, 18% to the Southern Region (which includes Argentina, Bolivia, Chile, Paraguay and Uruguay), and 27% to other markets including major shipment destinations such as Brazil, the United States, Colombia and Central America (referred to in this document as "Other Markets" or "Brazil and Other Markets"). In 2018, Ternium's net sales were $11.5 billion, operating income was $2.1 billion, and net income attributable to owners of the parent was $1.5 billion.

A. History and Development of the Company

The Company

Our legal and commercial name is Ternium S.A. The Company was organized as a public limited liability company (société anonyme) under the laws of the Grand-Duchy of Luxembourg on December 22, 2003. Our Luxembourg office is located at 29, Avenue de la Porte-Neuve – 3rd floor, L-2227 Luxembourg, telephone number +352 2668 3152. Our agent for U.S. federal securities law purposes is Ternium U.S.A. Incorporated, located at 2200 West Loop South, Suite 945, Houston, TX 77027, United States.

Ternium

Ternium's origins began in September 1961 with the founding of Propulsora Siderúrgica, or Propulsora, by San Faustin's predecessor in Argentina. Propulsora began its operations as a producer of cold-rolled coils in December 1969 and in the early 1990s began to evolve through a series of strategic investments aimed at transforming Propulsora into an integrated steel producer. In 1993, Propulsora merged with Aceros Paraná S.A. (a company formed by the Argentine government in connection with the privatization of Somisa, at that time the main integrated producer of flat steel in Argentina) and three other affiliated steel industry companies. After the merger, Propulsora changed its name to Siderar S.A.I.C., and later to Ternium Argentina S.A. San Faustin held a controlling interest in Siderar, with the remainder being held mainly by Usiminas, certain former employees of Somisa, and public investors.

In December 1997, a consortium formed by San Faustin, Ternium Argentina, Usiminas, Hylsamex, and Siderurgica Venezolana S.A., or Sivensa, won the bid in the privatization of a controlling interest in Sidor C.A., or Sidor, the largest steel company in Venezuela.
As part of a multiple-step corporate reorganization in 2005, San Faustin reorganized its investments in steel manufacturing, processing and distribution businesses by contributing to the Company San Faustin's controlling interests in Ternium Argentina and other subsidiaries in exchange for shares of the Company. In addition, Usiminas and Sivensa exchanged their interests in Ternium Argentina, Sidor and other subsidiaries for shares of the Company.
In 2005, we acquired, together with Ternium Argentina, an indirect 99.3% interest in the Mexican company Hylsamex and its subsidiaries.
On January 11, 2006, the Company launched an initial public offering of 24,844,720 ADSs, each representing 10 shares of the Company, in the United States, and subsequently granted the underwriters of the Company's initial public offering an option to purchase up to 3,726,708 additional ADSs to cover over-allotments in the sale of the ADSs.
On December 28, 2006, we acquired an additional 4.85% interest in Ternium Argentina from CVRD Internacional S.A, thereby increasing our ownership interest in Ternium Argentina to 60.93%.
On April 29, 2007, the Company entered into an agreement with Grupo Imsa and Grupo Imsa's controlling shareholders regarding Ternium's control of Grupo Imsa. Under the agreement, the Company, through a wholly-owned subsidiary, made a cash tender offer under applicable Mexican law for all of the issued and outstanding share capital of Grupo Imsa, which resulted in the acquisition of 25,133,856 shares, representing 9.3% of the issued and outstanding capital of Grupo Imsa. Concurrently with the consummation of the tender offer, on July 26, 2007, all the shares of Grupo Imsa that were not tendered into the tender offer (including the shares owned by Grupo Imsa's majority shareholders), representing 90.7% of Grupo Imsa's issued and outstanding share capital, were redeemed for cash pursuant to a capital reduction effected at the same price per share. Following this capital reduction, we became the sole shareholder of Grupo Imsa.
In 2007, Grupo Imsa was renamed Ternium Mexico and, effective March 31, 2008, Hylsamex merged with and into Ternium Mexico. In connection with this merger, Ternium Argentina acquired, and currently holds, a 28.7% participation in Ternium Mexico.
On April 29, 2008, the National Assembly of Venezuela passed a resolution declaring that the shares of Sidor, together with all of its assets, were of public and social interest, and authorizing the Venezuelan government to take any action it deemed appropriate in connection with any such assets, including expropriation. On May 11, 2008, the President of Venezuela issued Decree Law 6058 ordering that Sidor and its subsidiaries and associated companies were transformed into state-owned enterprises ("empresas del Estado"), with Venezuela owning not less than 60% of their share capital. On May 7, 2009, Ternium completed the transfer of its entire 59.7% interest in Sidor to Corporación Venezolana de Guayana, a Venezuelan state-owned entity.
On August 25, 2010, Ternium completed the acquisition of a 54% ownership interest in Ferrasa and, indirectly, in its wholly-owned Colombian subsidiaries, Siderúrgica de Caldas S.A.S. and Perfilamos del Cauca S.A.S. On April 7, 2015, Ternium acquired the remaining 46% minority interest in Ferrasa. Through this investment, Ternium expanded its business and commercial presence in Colombia. In 2017, Ferrasa was renamed Ternium Colombia.
In November 2010, Ternium and NSSMC established Tenigal, with each company holding 51% and 49% participations, respectively. Tenigal completed the construction of a hot dip galvanizing plant in the vicinity of Monterrey City, Mexico, which commenced production in the third quarter of 2013. Tenigal was designed to produce high grade and high quality galvanized and galvannealed automotive steel sheets, including outer panel and high strength qualities.
On January 16, 2012, the Company's subsidiaries Ternium Investments and Ternium Argentina (together with its wholly-owned subsidiary Prosid Investments S.A., or Prosid), and the Company's affiliate, Confab Industrial S.A., a subsidiary of Tenaris, or TenarisConfab, joined the existing control group of Usiminas, a leading steel company in the Brazilian flat steel market, through the acquisition of 84.7, 30.0, and 25.0 million ordinary shares, respectively, and formed the so-called Ternium/Tenaris (T/T) Group.
On October 30, 2014, Ternium Investments acquired 51.4 million additional ordinary shares of Usiminas. On April 20, 2016, Ternium Investments subscribed to 7.0 million, and Ternium Argentina (together with Prosid) subscribed to

an aggregate 1.5 million preferred shares of Usiminas. On July 19, 2016, Usiminas' extraordinary general shareholders' meeting homologated a capital increase, and Ternium Investments was issued 62.6 million additional ordinary shares, and Ternium Argentina and Prosid were issued an aggregate 13.8 million additional ordinary shares. As a result of these transactions, Ternium, through its subsidiaries Ternium Investments, Ternium Argentina and Prosid, currently owns 242.6 million ordinary shares of Usiminas (representing 34.4% of Usiminas' ordinary shares) and 8.5 million of Usiminas' preferred shares (representing 1.6% of Usiminas' preferred shares), representing, in aggregate, 20.5% of Usiminas' capital. Ternium Investments, Ternium Argentina, Prosid and TenarisConfab are parties to an Usiminas shareholders' agreement, effective as of April 10, 2018, with NSSMC, Mitsubishi Corporation do Brasil S.A. and Metal One Corporation (comprising the so-called NSSMC Group) and Previdência Usiminas, governing their rights and obligations as shareholders of Usiminas. For further information on our investment in Usiminas, see "—C. Organizational Structure—Other Investments—Usiminas."

On September 7, 2017, the Company acquired a 100% ownership interest in thyssenkrupp Slab International B.V, or tkSI, and its wholly-owned subsidiary CSA from thyssenkrupp AG, or tkAG. Through this investment, Ternium significantly expanded its steel slabs production capacity. As part of this process tkSI was renamed Ternium Staal B.V. and CSA was renamed Ternium Brasil Ltda.

For information on Ternium's capital expenditures, see "—B. Business Overview—Capital Expenditure Program."

B. Business Overview

Our Business Strategy

Our main strategic objective is to enhance shareholder value by strengthening Ternium's position as a competitive producer of steel products, in a manner consistent with minority shareholders' rights, while further consolidating Ternium's position as a leading steel producer in Latin America and a strong competitor in the Americas. The main elements of this strategy are:

- Focus on higher margin value-added products. We intend to continue to shift Ternium's sales mix toward higher margin value-added products, such as cold-rolled sheets and coated and tailor-made products, and services, such as just-in-time delivery and inventory management. For example, Ternium is building a new hot-dip galvanizing line, a new painting line and a new hot rolling mill at its facility in Pesquería, Mexico. For further information on Ternium's capital expenditures, see "—Capital Expenditure Program."
- Pursue strategic growth opportunities. We have a history of strategically growing our businesses through acquisitions and joint ventures. In addition to pursuing organic growth, we intend to identify and actively pursue growth-enhancing strategic opportunities to consolidate Ternium's presence in its main markets and expand it to the rest of the Americas, increase its upstream integration, expand its offerings of value-added products, increase its steel production, and increase its distribution capabilities. For example, on September 7, 2017, Ternium acquired a 100% ownership interest in tkSI and its wholly-owned subsidiary CSA from tkAG. CSA, now renamed Ternium Brasil Ltda., is a steel slab producer with a steelmaking facility located in the state of Rio de Janeiro, Brazil, and has an annual production capacity of 5 million tons of high-end steel slabs, a deep-water harbor and a 490 MW combined cycle power plant. The above-mentioned investment in a new state-of-the-art hot rolling mill in Pesquería, Mexico, which was announced after the addition of the Rio de Janeiro facility to Ternium's industrial system, constitutes a logical next step: the Rio de Janeiro facility together with the new hot-rolling mill in Pesquería would enable Ternium to expand its product range in Mexico with a broader dimensional offering and the most advanced steel grades, and reduce lead times in the value chain targeting the demanding and innovative automotive industry, as well as the home appliance, HVAC, machinery, energy and construction sectors. For further information on the acquisition of CSA, see note 3 to our consolidated financial statements included in this annual report. For further information on Ternium's capital expenditures, see "—Capital Expenditure Program." For a description of some of the risks associated with Ternium's growth strategy, see Item 3. "Key Information—D. Risk Factors—Risks Relating to Our Business—Future acquisitions or other significant investments could have an adverse impact on Ternium's operations or profits, and Ternium may not realize the benefits it expects from these business decisions."
- Implement Ternium's best practices. We believe that the implementation of Ternium's managerial, commercial and production best practices in acquired and new facilities and businesses should generate benefits and savings.
- Maximize the benefits arising from Ternium's broad distribution network. We intend to maximize the benefits arising from Ternium's broad network of distribution, sales and marketing services to reach customers in major steel markets

with a comprehensive range of value-added products and services and to continue to expand its customer base and improve its product mix.

- Enhance Ternium's position as a competitive steel producer. We are focused on improving utilization levels of our plants, increasing efficiency and further reducing production costs from levels that we already consider to be among the most competitive in the steel industry through, among other measures, capital investments and further integration of our facilities. In addition, we aim at obtaining better purchase conditions and prices by combining the demand of products and services by both Ternium and Tenaris. We pursue this goal through Exiros, a purchase and sale agency which we own 50%/50% with Tenaris. Exiros has offices in various countries and is in charge of the procurement of a majority of our purchases of raw materials and other products or services. For further information, see Item 7. "Major Shareholders and Related Party Transactions—B. Related Party Transactions—Purchase Agency Services and Sales of Materials".

Our Products

The Ternium companies produce mainly finished and semi-finished steel products and iron ore, which are sold either directly to steel manufacturers, steel processors or end-users, after different value-adding processes. We also produce electricity and sell unused balances to the Mexican and Brazilian electric grids.

In the steel segment, steel products include slabs, billets and round bars (steel in its basic, semi-finished state), hot-rolled coils and sheets, bars and stirrups, wire rods, cold-rolled coils and sheets, tin plate, hot dipped galvanized and electrogalvanized sheets and pre-painted sheets, steel pipes and tubular products, beams and roll formed products. Galvanized and pre-painted sheets can be further processed into a variety of corrugated sheets, trapezoidal sheets and other tailor-made products to serve Ternium's customer requirements. Other products in the steel segment include electricity and pig iron.

In the mining segment, iron ore is sold as concentrates (fines) and pellets.

Steel products

Slabs, billets and round bars: These products are semi-finished steel forms with dimensions suitable for its processing into specific product types. Slabs are processed into hot-rolled flat products. The use of slabs is determined by their dimensions and by their chemical and metallurgical characteristics. Billets are processed into long steel products, such as wire rods, bars and other shapes. Round bars are processed into seamless tubes.

Hot-rolled products: Hot-rolled flat products are used by a variety of industrial consumers in applications such as the manufacturing of wheels, auto parts, pipes, gas cylinders and containers. They are also directly used for the construction of buildings, bridges and railroad cars, and for the chassis of trucks and automobiles. Hot-rolled flat products can be supplied as coils, strips or as sheets cut to a specific length. These products also serve as inputs for the production of cold-rolled products. Merchant bars include specific shape features, such as rounds, flats, angles, squares and channels, which are used by customers to manufacture a wide variety of products such as furniture, stair railings and farm equipment. Reinforcing bars (rebars) and stirrups, obtained from the mechanical transformation of rebars, are used to strengthen concrete highways, bridges and buildings. Rods are commonly drawn into wire products or used to make bolts and nails. Wire rod can be produced in different qualities according to customers' demands.

Cold-rolled products: Cold-rolled products are applied mainly to the automotive, home appliance and capital goods industries, as well as to galvanizers, drummers, distributors and service centers. Cold-rolled coils are sold as coils or cut into sheets or blanks to meet customers' needs. These products also serve as inputs for the production of coated products.

Coated products: Galvanized sheets are produced by adding a layer of zinc to cold-rolled coils, which are afterwards cut into sheets. Galvanized sheets are used in the automotive, construction and home appliances industries. Galvanized coils can also be further processed with a color coating to produce pre-painted sheets, resulting in a product that is mainly sold for building coverings, manufacturing of ceiling systems, panels, air conditioning ducts, refrigerators, air conditioners, washing machines and several other uses. Ternium also offers a distinctive type of galvanized product with coating composition that contains approximately 55% aluminum and 44% zinc to improve product performance for the construction industry, including rural, industrial and marine sites. Tinplate, given its resistance to corrosion and its mechanical and chemical characteristics, is mainly sold to the packaging industry for food canning, sprays and paint containers. Tinplate is produced by coating cold-rolled coils with a layer of tin.

Roll-formed and tubular products: These products include tubes for general use, structural tubes, tubes for mechanical applications, conduction tubes, conduction electrical tubes, oil tubes and pre-engineered metal building systems.

Tubular products, uncoated or galvanized, have applications in several sectors including home accessories, furniture, scaffolding, automotive, bicycles, hospital equipment, posts for wire mesh garden and poultry tools, handrails, guard-rails, agricultural machinery, industrial equipment, conduction of water, air, gas, oil, high-pressure liquids and special fluids and internal building electrical installations. Beams, including C and Z section steel profiles (purlings) and tubular section beams, are obtained by roll-forming of steel strips and have applications in window frames, stilts, mainstays, crossbeams, building structures, supports, guides and crossbars for installing windows, doors, frames and boards. Other products include insulated panels, roofing and cladding, roof tiles and steel decks. Obtained from the mechanical transformation of flat steel, uncoated, galvanized or pre-painted, these products are used mainly in the construction industry in warehouses, commercial and industrial refrigeration installations, grain storage, poultry and porcine confinement facilities, roofing and side walls for buildings, and terraces and mezzanine floorings. Pre-engineered metal building systems are steel construction systems designed for use in low-rise non-residential buildings, and are constructed from the mechanical transformation of flat steel such as frames, secondary steel members, roofs and walls panels, as well as finishing and accessories.

Other products: Other products include mainly electricity and pig iron. Pig iron is a semi-finished product obtained in the blast furnace that is mostly used as metallic charge in the steel shop for the production of crude steel, and also marketed to other steel producers and to manufacturers of iron-based cast products.

Within each of the basic product categories, there is a range of different “items” of varying qualities and prices that are produced either to meet the particular requirements of end users or sold as commodity items.

Iron ore products

Concentrates (fines) and pellets: These products are raw materials used for the production of steel. Iron ore concentrates are iron ore fines with high iron content. Iron ore pellets are produced from iron ore concentrates. Ternium ships most of the pellets to its own steel manufacturing operations and it also markets the surplus portion of its iron ore pellets and concentrates, if any, to other steel manufacturers.

Production Facilities and Processes

Ternium has steel production facilities, service centers, distribution centers, or DCs, and mining operations in Mexico, steel production facilities and service centers in the Southern Region, and steel production facilities, service centers and DCs in other markets, specifically Brazil, Colombia, the United States and Central America.

Ternium’s aggregate production capacity of crude steel as of December 31, 2018, calculated based on management estimates of standard productivity, product mix allocations, the maximum number of possible working shifts and a continued flow of supplies to the production process, was approximately 12.4 million tons. Ternium’s aggregate production capacity of finished steel products, calculated based on the same criteria as for crude steel production, was approximately 11.3 million tons. Ternium’s aggregate production capacity of iron ore pellets as of December 31, 2018, was 4.0 million tons. Such iron ore products are mainly sold intercompany for the production of steel products by our steel segment.

Steel production facilities, service centers and distribution centers

The assets described in this section are owned by Ternium's operating subsidiaries. The following table provides an overview, by type of asset, of Ternium's production capacity as of December 31, 2018:

Production asset	Quantity	Nominal capacity (thousand tons per year)[1]				
		Mexico	Brazil	Argentina	Other	Total
Coke Plant	7		1,800	1,040		2,840
Sinter Plant	2		5,700	1,480		7,180
Direct Reduced Iron Plant	3	2,710				2,710
Blast Furnace	4		5,300	3,220		8,520
Electric Arc Furnace	5	4,170			210	4,380
Basic Oxygen Furnace	5		5,200	3,500		8,700
Vacuum Degassing	3	840	3,200	1,200		5,240
Aluminum Heating Furnace	1		3,000			3,000
Thin Slab Continuous Caster	1	2,440				2,440
Slab Continuous Caster	4		5,000	5,630		10,630
Billet Continuous Caster	3	1,640			210	1,850
Hot-rolling Mill (flat products)	4	6,390		2,890		9,280
Skin-Pass Mill	4	2,700		990		3,690
Hot-rolling Mill (long products)	4	1,160			220	1,380
Pickling Line	9	5,270		1,910		7,180
Cold-Rolling Mill (Tandem or Reversing)	9	3,600		1,840		5,440
Electrolytic Cleaning	5	1,940		230		2,170
Annealing Line	5	1,590		1,330		2,920
Temper Mill	7	2,040		2,020		4,060
Tension-Leveling / Inspection Line	10	1,440		1,150		2,590
Electro-Tinplating line	1			160		160
Hot Dip Galvanizing Line	12	1,970		630	330	2,930
Electro-Galvanizing Line	1			110		110